T041 - TT Electrical Machines and Drives

Chairs: Changxing Ding, Qinghua Dong

07:00-07:13 State of Health Estimation of Battery Charging System and BLDC Motor Drive deployed in Electric Vehicle Applications  
*Adil Usman, Bharat Singh Rajpurohit*

Show (Yes/No): Comments:

07:13-07:26 Voltage Dip Analysis on Doubly Fed Induction Generator During Grid Faults in Wind Energy Conversion System  
*Milkias Berhanu Tuka*

Show (Yes/No): Comments:

07:26-07:39 Sensorless and On-line Parameter Estimation with Model Predictive Control of IPMSMs  
*Minh Xuan Bui, Dan Xiao, Faz Rahman, Khac Thuy Le*

Show (Yes/No): Comments:

07:39-07:52 Detection of Inter-turn Short Circuit Faults in Permanent Magnet Synchronous Motors with Multistrands Windings  
*Seongyun Kim, Hyeyun Jeong, Hojin Lee, Sang Woo Kim*

Show (Yes/No): Comments:

07:52-08:05 Operation-Area-Selected Overmodulation Strategy for Flux-Weakening Control of Surface-Mounted Permanent Magnet Synchronous Motor  
*Yong Yu, Linzhi Wang, Bo Wang, Qinghua Dong, Dianguo Xu*

Show (Yes/No): Comments:

08:05-08:18 Sensor-less Back-drive Control of Direct-drivable RotLin Linear Series Elastic Actuator  
*Lang Bu, Yasutaka Fujimoto*

Show (Yes/No): Comments:
T045 - TT Electrical Machines and Drives

Chairs: Feng Qian, Weiguo Liu

07:00-07:13 Neural Network Model-based Direct Torque and Flux Predictor for Induction Motor Drive
Kanungo Barada Mohanty, Abhimanyu Sahu, Rabi Narayan Mishra

07:13-07:26 Origami Inspired Laser Scanner Design
Shen-Yun Chu, Shao-Kang Hung

07:26-07:39 Second-Order Complex-Coefficient Filter PLL for Model-based Sensorless IPMSM Drives with Operation-Frequency-Adaptive Character
Bo Wang, Anqi Ge, Yong Yu, Dianguo Xu

07:39-07:52 Novel Exciter Controller and Its Application in Rotor Position Estimation for Aircraft Three-Stage Wound Rotor Synchronous Starter-Generator
Ningfei Jiao, Xiaoke Zhang, Xu Han, Zijie Li, Peixin Liang, Weiguo Liu

07:52-08:05 Four quadrant operation of SRM drive based on Modulated Torque Sharing Function
Ashwani Kumar Rana, Samant Singh, A V Ravi Teja

08:05-08:18 Analysis of the effects of Considering Dynamic Cross Saturation in Mathematical Model of a Six-Phase Self-Excited Generator for Renewable Energy Applications
Mohd Rizwan Khan, Mohd Faisal Khan, Mohd Sartaj
47th Annual Conference of the IEEE Industrial Electronics Society

Room C

Wednesday, 13 October 2021
07:00 - 08:20

T011 - TT Cloud Computing, Big Data and Software Engineering

Chairs: Yan Peng, Lei Peng

07:00-07:13 Pseudocode to Source code conversion using Sequence-to-Sequence Learning
Minhazul Arefin, Mohammed Nasir Uddin

Show (Yes/No): Comments:

07:13-07:26 Integrated Prediction of Regional Traffic Situation Based on Multi-Task Spatial-Temporal Network
Jiaao Yu, Kangshuai Zhang, Lei Peng

Show (Yes/No): Comments:

07:26-07:39 Knowledge driven rapid development of white box digital twins for industrial plant systems
Amar Banerjee, Subhrojyoti Roy Chaudhuri, Barnali Basak, Renganathan Dhakshinamoorthy, Seenivasan Annadurai, Naveenkumar Subramani

Show (Yes/No): Comments:

07:39-07:52 Fuzzy Unsupervised Approaches to Analyze Covid-19 Spread for School Reopening Decision Making
Feby Artwodini Muqtadiroh, Diana Purwitasari, Eko Mulyanto Yuniarno, Supeno Mardi Susiki Nugroho, Apol Pribadi Subriadi, Riris Diana Rachmayanti, Mauridhi Hery Purnomo

Show (Yes/No): Comments:

07:52-08:05 Automatic Classification of Lithofacies with Highly Imbalanced Dataset Using Multistage SVM Classifier
Deepan Datta, Gagandeep Singh, Aurobinda Routray, William K. Mohanty, Rahul Mahadik

Show (Yes/No): Comments:

08:05-08:18 Autonomous Temporal Time Zone Management
Michal Kvet

Show (Yes/No): Comments:
T081 - TT New Technologies for Electric Transportation

Chairs: Qingrui Zhang, Federico Faruffini

07:00-07:13  **Retrofitting of Conventional Two-wheelers to Electric Two-Wheelers**
Nirmal A Kumar, Navaneeth M, Allan Sabu Joseph
Show (Yes/No):  Comments:

07:13-07:26  **A Detailed Loss Model of Current-Fed Half-Bridge AC-DC Converter Considering Swinging Boost Inductor**
Manish Kumar, Sumit Pramanick, B K Panigrahi
Show (Yes/No):  Comments:

07:26-07:39  **Driving Range Extension of Electric City Buses using Opportunity Wireless Charging**
Harish Karneddi, Deepak Ronanki
Show (Yes/No):  Comments:

07:39-07:52  **Vertical control of a self-stabilizing monorail vehicle**
Martin Griese, Fabian Kottmeier, Thomas Schulte
Show (Yes/No):  Comments:

07:52-08:05  **Context Modelling applied to the Intelligent Vehicle Navigation**
Federico Faruffini, Hugo Pousseur, Alessandro Correa-Victorino, Marie-Hélène Abel
Show (Yes/No):  Comments:

08:05-08:18  **Procedure for Avoiding and Reducing Peak Loads at Large-scale Consumers via Bidirectional Charging of Electric Vehicles to Save Electricity Costs**
Philipp Spichartz, Tobias Brüning, Constantinos Sourkounis
Show (Yes/No):  Comments:
47th Annual Conference of the IEEE Industrial Electronics Society

Room E

Wednesday, 13 October 2021
07:00 - 08:20

T021 - TT Control System, Robotics and Automation

Chairs: Lin Zhao, Wangli He

07:00-07:13 Event-Triggered Bipartite Consensus of Linear Leader-Following Multi-Agent Systems With Quantized Information
Qiang Wang, Wangli He, Dayu Tan, Weimin Zhong
Show (Yes/No): Comments:

07:13-07:26 Precise Localization for Cooperative Transportation Robot System Using External Depth Camera
Shinya Yasuda, Taichi Kumagai, Hiroshi Yoshida
Show (Yes/No): Comments:

07:26-07:39 Tracking and Catching of an In-Flight Ring using a High-Speed Vision System and a Robot Arm
Xiao Liang, Hairui Zhu, Yanlong Chen, Yuji Yamakawa
Show (Yes/No): Comments:

07:39-07:52 Secure Consensus Control of Two-timescale Networks Subject to Sequential Scaling Attacks
Kun Liang, Wangli He
Show (Yes/No): Comments:

07:52-08:05 Robust control of weight on bit in unified experimental system combining process model and laboratory drilling rig
Sike Ma, Min Wu, Ludefeng Chen, Chengda Lu
Show (Yes/No): Comments:

08:05-08:18 Continuous Curvature Turns Based Method for Least Maximum Curvature Path Generation of Autonomous Vehicle
Yu Tian, Zhang Chen, Chuanyi Xue, Yiyong Sun, Bin Liang
Show (Yes/No): Comments:
47th Annual Conference of the IEEE Industrial Electronics Society

Room F

Wednesday, 13 October 2021
07:00 - 08:20

T071 - TT Motion Control and Mechatronics

Chairs: Liang Hu, Sehoon Oh

07:00-07:13 Design of Disturbance Suppression Control for Shaking-Table by Data-driven Control
   Shinji Ishihara, Koichi Tahara, Koji Hironaka
   Show (Yes/No):     Comments:

07:13-07:26 Equivalent Disturbance Compensator and Friction Compensation for Back-Forward Drivability Improvement
   Yusuke Kawai, Juan Padron, Yuki Yokokura, Kiyoshi Ohishi, Toshimasa Miyazaki
   Show (Yes/No):     Comments:

07:26-07:39 Design and Analysis of a Magnetic Levitation Tension Testing Device
   Mengyi Ren, Koichi Oka
   Show (Yes/No):     Comments:

07:39-07:52 An Adaptive Approach Based on Neural Network and Phase-Locked Loop for Correcting Quadrature Sinusoidal Signals of Magnetic Encoders
   Siyi Yu, Weike Liu, Xiaofeng Yang, Feng Shu
   Show (Yes/No):     Comments:

07:52-08:05 Design of ABC algorithm-based Unknown-Input Estimator considering stability of initial colony
   Shun Nishizawa, Toshiyuki Satoh, Naoki Saito, Jun-ya Nagase, Norihiko Saga
   Show (Yes/No):     Comments:

08:05-08:18 FDOB-Based Robust Impedance Control of Force Sensor Implemented Force Servo System
   Kangwagyae Samuel, Sehoon Oh
   Show (Yes/No):     Comments:
T061 - TT Industrial Automation, Communication, Networking and Informatics

Chair: Yan Zhao, Wenbin Dai
07:00-07:13 Cross-Disciplinary View of Industrial Electronics: Change, Chance, and Challenge
   Show (Yes/No): Comments:

07:13-07:26 Robust Classification with Noisy Labels for Manufacturing Applications: A Hybrid Approach Based on Active Learning and Data Cleaning
   Shuo Zhao, Xin Li, Ying-Chi Chen
   Show (Yes/No): Comments:

07:26-07:39 Process Monitoring based on Probabilistic Principal Component Analysis for Drilling Process
   Haipeng Fan, Min Wu, Xuzhi Lai, Sheng Du, Chengda Lu, Luefeng Chen
   Show (Yes/No): Comments:

07:39-07:52 Dataflow Management Platform for Smart Communities using an Edge Computing Environment
   Shogo Shimahara, Hiroaki Nishi
   Show (Yes/No): Comments:

07:52-08:05 Non-Functional Requirements Elicitation Based on Domain Knowledge Graph for Automatic Code Generation of Industrial Cyber-Physical Systems
   Yingyue Zhang, Jiale Kang, Wenbin Dai
   Show (Yes/No): Comments:

08:05-08:18 Integrated Asset Management Model based on IEC 61499 and Administration Shell
   Bingshuo Lv, Yunpeng Zhang, Wenbin Dai
   Show (Yes/No): Comments:
T121 - TT Signal and Image Processing and Computational Intelligence

Chairs: Xianwei Li, Tetsuyasu Yamada

07:00-07:13 Automatic Generation of Work Support Behavior with Smart Glasses based on the Deep Neural Network Corresponding to Encrypted Training Data
   Kohjiro Hashimoto, Tadashi Miyosawa, Tetsuyasu Yamada
   Show (Yes/No): Comments:

07:13-07:26 Real-time personnel counting of indoor area division based on improved YOLOV4-Tiny
   Wei Wen, Fei Xia, Lin Xia
   Show (Yes/No): Comments:

07:26-07:39 Biometric Information Acquisition System Using VMD in Wi-Fi Channel Status Information
   Kazuya Tsubota, Yuki Nagatsu, Hideki Hashimoto
   Show (Yes/No): Comments:

07:39-07:52 Online Knowledge Distillation Based On Multi-Stage Multi-Generative Adversarial Network
   Yimin Zhou, Zhonghao Huang, Xing Yao Yang
   Show (Yes/No): Comments:
T091 - TT Power Electronics & Energy Conversion

Chairs: Huihui Pan, Zhitao Liu

07:00-07:13 Feedback Linearization Control for the Receiving-Side Buck Converter of Dynamic Wireless Charging System of Electric Vehicles
Ze Zhou, Zhitao Liu, Hongye Su, Liyan Zhang
Show (Yes/No): Comments:

07:13-07:26 An Online Noninvasive Estimation Method of Electrolytic Capacitor for Boost Converters
ChuanFeng Li, Yang Yu, Qingxin Liu, Xiyuan Peng
Show (Yes/No): Comments:

07:26-07:39 Improved I--V Tracer for Detecting and Analyzing Photovoltaic Power Generators
Yechen Zhu, Weidong Xiao
Show (Yes/No): Comments:

07:39-07:52 A Novel High-Frequency Isolated Single-Phase Full-Bridge Buck-Boost inverter
Show (Yes/No): Comments:

07:52-08:05 Stability Oriented Design Considerations in the Control of Cascaded Converters through their Impedance Models
Goutam Ghosh, Soumitro Vyapari, Viju Nair
Show (Yes/No): Comments:

08:05-08:18 Operation Control Strategy of Multi-Energy DC Micro-Grid Considering Complementary Inertia of Gas and Battery
Xin Wang, Chunming Tu, Wanli Yang, Qi Guo, Yuchao Hou, Fan Xiao
Show (Yes/No): Comments:
47th Annual Conference of the IEEE Industrial Electronics Society

Room J

Wednesday, 13 October 2021
07:00 - 08:20

T101 - TT Power Systems and the Smart Grid

Chairs: Yong Chen, Ning Gao

07:00-07:13 Intelligent Controller for Thermal Comfort Management in Buildings
Mubashir Wani, Akshya Swain, Abhisek Ukil
Show (Yes/No): Comments:

Juhi Datta, Debapriya Das
Show (Yes/No): Comments:

07:26-07:39 Opting DC-voltage Droop Control for WF-VSCs in AC-MTDC grids for Effective Frequency and DC-voltage Support
Satish Kumar Ancha, Bibhu Prasad Padhy
Show (Yes/No): Comments:

07:39-07:52 Transactive Control of Industrial Pumps with Associated Storage for Demand Response Market Participation in Singapore
Rohit Chandra, Krishnanand Kaippilly Radhakrishnan, Sanjib Kumar Panda
Show (Yes/No): Comments:

07:52-08:05 Fault Diagnosis and Reconfiguration for H6 Grid Tied Inverter Using Kalman Filter
Chengqi Xiao, Weimin Wu, Ning Gao, Eftichios Koutroulis, Henry Shu-Hung Chung, Frede Blaabjerg
Show (Yes/No): Comments:

08:05-08:18 Parameter Estimation for Underground Cable Fault Using Stochastic Optimization
Sanhita Mishra, Soumyadeep Patra, Sarat Chandra Swain, Aurobinda Routray
Show (Yes/No): Comments:
S581 - SS Power Electronics Converters for Green Energy Supplies Topology, Modeling, Control, and Stability Analysis

Chairs: Nitin Gupta, Man Mohan Garg

07:00-07:13  A Fuzzy Logic based Adaptive Source Current THD Controller for Thyristor-Controlled LC-Coupling Hybrid Active Power Filter
   Wai-Kit Sou, Pak-Ian Chan, Cheng Gong, Chi-Seng Lam
   Show (Yes/No): Comments:

07:13-07:26  Extended Kalman Filter Based EV Charging Station with PV, Wind, Battery and UC Integration
   Bhargavi K. M., Bansilal Bairwa, Santhoshkumar Hampanavar, Sahithi S
   Show (Yes/No): Comments:

07:26-07:39  Modeling and Analysis of Modified Ultra-Lift Luo Converter Equipped with Voltage Multiplier Cell
   Akash Kumar Sahoo, Nirav Patel, Nitin Gupta, Prashant Jamwal
   Show (Yes/No): Comments:

07:39-07:52  Reduced Order Modeling of DFIG based on Singular Perturbation Theory
   Qunying Liu, Yijia Heng, Runsheng Zheng, Shuheng Chen
   Show (Yes/No): Comments:

07:52-08:05  An Impedance Model of a VSC-HVDC System Considering DC-side Dynamics for AC grid Stability Analysis
   Ni Liu, Hong Wang, Xiaoyong Zheng, Zhe Chen
   Show (Yes/No): Comments:

08:05-08:18  On the Stability of a Minimum-Loss Controlled Dual-VSI DFIG-DC System
   Gil Marques, Matteo Iacchetti, Sérgio Cruz
   Show (Yes/No): Comments:
S241 - SS DCDC Converters Circuits, Modeling, Control and Applications

Chairs: Mahajan Sagar Bhaskar, Frede Blaabjerg

07:00-07:13  A High Step-Up Nonisolated DC-DC Converter With Reduced Voltage Stress and Ripple-free Input Current
  Zhishuang Wang, Ping Wang, Wentao Jiang, Bo Li, Yuhui Zhao
  Show (Yes/No): Comments:

07:13-07:26  Switch Open and Short Circuit Fault diagnosis and Fault Tolerant Operation for Push-Pull Converter
  Jinxin Liu, Xiaobing Zhang, Yingnan Ren, Guozhao Liu, Zhiyuan Guo
  Show (Yes/No): Comments:

07:26-07:39  Unity Power Factor Control using Interleaved Boost Converter for Induction Motor Drive
  Gauravkumar Prajapati, Archana Thosar, Arbind Kumar
  Show (Yes/No): Comments:

07:39-07:52  Series Resonant Converter with Embedded Filters for DCX of Solid-State Transformer
  Shota Okutani, Pin-Yu Huang, Ryo Nishiyama, Yuichi Kado
  Show (Yes/No): Comments:

07:52-08:05  Comparative Analysis of Quadratic Buck-Boost Converters: Topology, Electric Stress, Reliability
  Svk Naresh, Sankar Peddapati
  Show (Yes/No): Comments:

08:05-08:18  Fast Transient Modulation of a Dual-Bridge Series Resonant Converter
  Hui Xu, Sheng-zhi Zhou, Xiaodong Li, Hao Chen, Song Hu
  Show (Yes/No): Comments:
S431 - SS IoT Automation Technologies, Tools and Applications

Chairs: Pal Varga, Federico Montori

07:00-07:13 Accelerating task completion in IIoT based smart factory through optimal restart
Qiushi Wang, Abhishek Gupta, Hian Leng Chan
Show (Yes/No): Comments:

07:13-07:26 Faster Deployment for Indoor Visible Light Positioning Using Xgboost Algorithms in Industrial Internet-of-Things
Pengfei Du, Sheng Zhang, Arokiaswami Alphones, Chen Chen
Show (Yes/No): Comments:

07:26-07:39 Stein Variational Recommendation System with Knowledge Embedding Enabling the IoT Services
Jia Liu, Yuanfang Chen, Sardar M.N. Islam, Pierluigi Siano
Show (Yes/No): Comments:

07:39-07:52 A Contemporary Approach Towards Curbing Cell Phone Use Related Road Mishaps
Abid Siddique, Mohammed Gousuddin, Rehna V. J.
Show (Yes/No): Comments:

07:52-08:05 Secure Communication Between Information Technology and Operational Technology
Mahyar Azarmipour, Ramy Hana, Zeeshan Ansar, Tobias Kleinert
Show (Yes/No): Comments:

08:05-08:18 Architecture pattern for automatic integration of IO-Link sensors into a System of Systems
Paul Patolla, Dirk Reichelt, Dirk Mothes, Germar Schneider
Show (Yes/No): Comments:
47th Annual Conference of the IEEE Industrial Electronics Society

Room N

Wednesday, 13 October 2021
07:00 - 08:20

S151 - SS Advances in Renewable Energy Systems Condition Monitoring and Prognosis using Machine Learning

Chairs: Mohamed Benbouzid, Xiandong Ma

07:00-07:13  Collaboratively Diagnosing IGBT Open-circuit Faults in Photovoltaic Inverters: A Decentralized Federated Learning-based Method
  Xinyi Wang, Bo Yang, Qi Liu, Tiankai Jin, Cailian Chen

Show (Yes/No):  Comments:

  Huiwen Yang, Tianzhen Wang, Yunjie Tang

Show (Yes/No):  Comments:

07:26-07:39  A Hierarchical Intelligent Fault Detection and Location Scheme for DC Ring Bus Microgrid
  Xinlong Zheng, Hua Han, Manling Shi, Yao Sun, Mei Su, Hongfei Wang

Show (Yes/No):  Comments:

07:39-07:52  Classification of Voltage Sag Causes based on Instantaneous Symmetrical Components using 1NN and Dynamic Time Warping
  Maria Veizaga, Sophie Bercu, Claude Delpha, Demba Diallo, Ludovic Bertin

Show (Yes/No):  Comments:

07:52-08:05  Effective Implementation of Convolutional Long Short-Term Memory (ConvLSTM) Network in Forecasting Solar Irradiance
  Chibuzor Obiora, Ahmed Ali

Show (Yes/No):  Comments:

08:05-08:18  A Hybrid Model of Modified Robust Linear Regression Optimized by Ant Colony Optimization for Photovoltaic System Efficiency Improvement Under Sudden Change of Environmental Conditions
  Ahmed Ali, Mpho Nkambule

Show (Yes/No):  Comments:
S131 - SS Advances in Human-Mechatronic Systems

Chairs: Sho Yokota, Daisuke Chugo

07:00-07:13 **Simultaneous robust optimization of tuned mass damper and control system of active mass damper**

*Kou Miyamoto, Sstoshi Nakano, Jinhua She, Daiki Sato, Yinli Chen*

Show (Yes/No):  Comments:

07:13-07:26 **Detection of Glass Surface Using Reflection Characteristic**

*Hiroki Sudo, Satoshi Muramatsu, Katsuhiko Inagaki, Daisuke Chugo, Hiroshi Hashimoto*

Show (Yes/No):  Comments:

07:26-07:39 **An Innovative Whisker Tactile Sensor for Intelligent Robotic Grasping**

*Sachith Dewthilina Liyanage, Abdul Md Mazid, Pavel Dzitac*

Show (Yes/No):  Comments:

07:39-07:52 **Object Tracking Algorithm with Two-way Parallel Fully-convolutional Siamese Networks**

*Hongyu Lu, Xiaodong Ren, Min Tong*

Show (Yes/No):  Comments:

07:52-08:05 **A Control Model for Following Target Inclination Angle in Lateral Direction for Omni-Directional Low-Floor Mobility**

*Mitsuhiro Suzuki, Sho Yokota, Akihiro Matsumoto, Daisuke Chugo, Hiroshi Hashimoto*

Show (Yes/No):  Comments:

08:05-08:18 **Development of a Walking Promotion Device using Arm Swing Induced by Parametric Excitation Third report: Evaluation on experimental results in actual walking**

*Kazuki Yamada, Sho Yokota, Akihiro Matsumoto, Daisuke Chugo, Hiroshi Hashimoto*

Show (Yes/No):  Comments:
47th Annual Conference of the IEEE Industrial Electronics Society

Room P

Wednesday, 13 October 2021
07:00 - 08:20

S481 - SS Modeling, Control, and design of Hybrid Offgrid systems

Chairs: Ambrish Chandra, Miloud Rezkallah

07:00-07:13 Resilient Synchronization Control of Distributed Generation Based Reconfigurable Microgrid
   Farheen Chishti, Bhim Singh, Ambrish Chandra, Kamal Al-Haddad
   Show (Yes/No): Comments:

07:13-07:26 Power Quality Improvement in a PV Based EV Charging Station Interfaced with Three Phase Grid
   Bhim Singh, Vandana Jain, Seema Kewat, Ambrish Chandra, Kamal Al-Haddad
   Show (Yes/No): Comments:

07:26-07:39 Islanded mode microgrid using Stirling based biogas generator and solar PV systems
   Pratik Kalkal, A.V. Ravi Teja
   Show (Yes/No): Comments:

07:39-07:52 Bumpless Transfer Control for A Class of Hybrid Stochastic Systems and Application to Electromagnetic Oscillation Circuit
   Sun Yichong, Cai Bo, Lu Shuai, Weng Rui, Li Min, Tan Tianyu
   Show (Yes/No): Comments:

07:52-08:05 Global Maximum Power Point Tracking Strategy based on BFO Method for Standalone PV System Under Partial Shading Conditions
   Félix Dubuisson, Ambrish Chandra, Miloud Rezkallah, Hussein Ibrahim
   Show (Yes/No): Comments:

08:05-08:18 Performance Study of a Decentralized Control Strategy for Hybrid Standalone Power Generation System
   Mouloud Belaid, Miloud Rezkallah, Ambrish Chandra, Hussein Ibrahim
   Show (Yes/No): Comments:
S321 - SS Energy Harvesting Technologies for Industrial Applications

Chairs: Yunjia Li, Kai Tao

07:00-07:13 Mathematical Modelling and Equivalent Circuit Representation of Bladeless Wind Turbines
   *Vaibhav Bhardwaj, A.V. Ravi Teja*
   Show (Yes/No): Comments:

07:13-07:26 Torsional Electromagnetic Vibrational Energy Harvester Based on Stacked Flexible Coils
   *Xinyi Wang, Jiaxing Li, Chenyuan Zhou, Kai Tao, Dayong Qiao, Yunjia Li*
   Show (Yes/No): Comments:

07:26-07:39 Torsional Electromagnetic Vibrational Energy Harvester Based on Stacked Flexible Coils
   *Xinyi Wang, Jiaxing Li, Chenyuan Zhou, Kai Tao, Dayong Qiao, Yunjia Li*
   Show (Yes/No): Comments:

07:39-07:52 A Novel Diagnosis Method of Proton Exchange Membrane Fuel Cells Based on Multi-Grained Cascade Forest and Principal Component Analysis
   *Rui Ma, Yuqi Zhang, Hanbin Dang, Zhe Huo, Dongdong Zhao*
   Show (Yes/No): Comments:

07:52-08:05 Stability Analysis of Fuel Cell/Battery On-Board DC Microgrid Based on Mixed Potential Theory
   *Yigeng Huangfu, Aiben Wang, Cong Yuan*
   Show (Yes/No): Comments:

08:05-08:18 Comparison of different multi-winding transformer models in multi-port AC-coupled converter application
   *Haojun Qin, Huan Zhang, Ming Liu, Chengbin Ma*
   Show (Yes/No): Comments:
47th Annual Conference of the IEEE Industrial Electronics Society

Room R

Wednesday, 13 October 2021
07:00 - 08:20

S711 - SS Smart SensorsActuators and IEEE 1451 Standards for SGloTIIoTCPS

Chairs: Kang Lee, Eugene Song

07:00-07:13 Security for IEEE P1451.0-Based IoT Sensor Networks
Ke Zhou, Jun Wu, Kang B. Lee, Eugene Song
Show (Yes/No): Comments:

07:13-07:26 Time Synchronization of IEEE P1451.0 and P1451.1.6 Standard-based Sensor Networks
Hiroaki Nishi, Eugene Y. Song, Yuichi Nakamura, Kang B. Lee, Yucheng Liu, Kim Fung Tsang
Show (Yes/No): Comments:

07:26-07:39 Development of IoT-based System for Enhancing Traditional Electrical Compliance Testers in Testing Laboratories
Chi Chung Lee, Tsz Him Kong, Hong Yuen Chui, Yuk Wa Cheung, Lam Sing
Show (Yes/No): Comments:

07:39-07:52 Wall Shear Stress-Based Accuracy Verification of Convective Heat Transfer Coefficient Using Velocity Scale
Tatsuhiro Yamamoto, Akihito Ozaki
Show (Yes/No): Comments:

07:52-08:05 An Overview of Standards in Modern Human Factors
Allen C. Chen, Sho Yokota, Victor Huang, Jinhua She
Show (Yes/No): Comments:

08:05-08:18 Communication-Resilient Microgrid Distributed Frequency Control with an Event-Triggered Mechanism
Sicheng Deng, Tianwen Zheng, Xiaonan Lu, Laijun Chen, Shengwei Mei
Show (Yes/No): Comments:
IECON2021 Opening Session
IECON2021 Keynote 1: Uday Deshpande

Electrification: Trends across Industries, Implications to Engineers and Engineering
Dr. Uday Deshpande, CTO, D&V Electronics, USA
Chairs: Sheldon Williamson,
IECON2021 Keynote 2: Lorenzo Rossi

Net Zero, pros and cons.
Lorenzo Rossi
Director of Worksport Ltd. & CEO of TerraVis Energy
Chairs: Sheldon Williamson,
Chair: Giampaolo Buticchi, Giovanni Migliazza
10:00-10:13 Overview on the electromagnetic compatibility of a shielded room in the presence of wall sockets
   Petrache Vicentiu, Petrache Ana Lavinia
Show (Yes/No): Comments:

10:13-10:26 Impact of Bearing Faults on Vibration Level of BLDC Motor
   Karolina Kudelina, Toomas Vaimann, Anton Rassölkin, Ants Kallaste
Show (Yes/No): Comments:

10:26-10:39 On-line loss and global efficiency simulation tool for electric vehicles applications
   Charbel Zaghrini, Gabriel Khoury, Maurice Fadel, Ragi Ghosn, Flavia Khatounian
Show (Yes/No): Comments:

10:39-10:52 Braking Induction Motors Using Soft Starter Torque and Flux Control Algorithm
   Hauke Nannen, Heiko Zatocil, Gerd Griepentrog
Show (Yes/No): Comments:

10:52-11:05 Exciter Remanence Effect Mitigation in a Brushless Synchronous Generator for Test-field Applications
   Antti Wredfors, Juhamatti Korhonen, Juha Pyrhönen, Markku Niemelä, Pertti Silventoinen
Show (Yes/No): Comments:

11:05-11:18 Online Estimation and Compensation of Back-Electromotive Forces for Synchronous Reluctance Machine
   Laurent Schuller, Romain Delpoux, Jean-Yves Gauthier, Xavier Brun
Show (Yes/No): Comments:
T0410 - TT Electrical Machines and Drives

Chairs: Antonino Oscar Di Tommaso, Alessandro Serpi
10:00-10:13 Physical Model of Permanent Magnet Synchronous Machine with Multilayer Winding
   Jan Laksar, Lukas Veg
   Show (Yes/No): Comments:

   Shima Khoshzaman, Yikai Tang, Ingo Hahn
   Show (Yes/No): Comments:

10:26-10:39 Observer based Sensorless Stator Temperature Estimation of an automotive 48V IPMSM
   Christoph Cheshire, Tobias Roeser, Felix Gliese, Achim Vedde, Ulrich Ammann
   Show (Yes/No): Comments:

10:39-10:52 Synchronous Reluctance Motor with fluid shaped barriers: preliminary and optimized design procedures
   Andrea Credo, Giuseppe Fabri, Lino Di Leonardo, Marco Villani
   Show (Yes/No): Comments:

10:52-11:05 Design and Analysis of a Double Coaxial Magnetic Coupling to Improve Torque Density
   Yusuf Akcay, Oliver Tweedy, Paolo Giangrande, Michael Galea
   Show (Yes/No): Comments:

11:05-11:18 Impact of Number of Nodes Used in 3D LPTN on the Results and Computational Time of the PMSM Validated by FEA and Measurement
   Martin Skalicky, Roman Pechanek, Lukas Sobotka, Lukas Veg
   Show (Yes/No): Comments:
47th Annual Conference of the IEEE Industrial Electronics Society

Room C

Wednesday, 13 October 2021
10:00 - 11:20

IF1 - Industrial Internet

Talk 1: Time Sensitive Networking: Where the Cloud meets Reality (10:00 – 10:25 am)
Mr. Norman Finn, Network Standards Consultant (Huawei, USA)

Talk 2: Smart Distributed Control Energy Systems (10:25 – 10:50 am)
Mr. Yongbin Sun, Vice President (China Techenergy Co. Ltd., China)

Talk 3: Universal Automation: the Missing Link for Industry 4.0 (10:50 – 11:15 am)
Mr. John Conway, Vice President (Schneider Electric Industries, SAS, France)

Chairs: Dr. Michael Condry,
47th Annual Conference of the IEEE Industrial Electronics Society

Room D

Wednesday, 13 October 2021
10:00 - 11:20

INTEROP1 - Automation

Smart Battery Gauge, Mo-Yuen Chow
P2805, William Dai
P2023, Lee Stogner
P2668, Kim Fung Tsang
OPEN DISCUSSIONS
Chairs: Dietmar Bruckner,
T026 - TT Control System, Robotics and Automation

Chairs: Gabor Sziebig, Csaba Budai

10:00-10:13 Formation Control of Multi-Robot System with Collision and Obstacle Avoidance by Novel APF
   Nabarun Sarkar, Alok Kanti Deb
   Show (Yes/No): Comments:

10:13-10:26 Yaw Channel Tracking Control of an AUV with Delayed Output
   Ravishankar Desai, Narayan Manjarekar
   Show (Yes/No): Comments:

10:26-10:39 Multi-Class Sensor Fault Isolation for Vehicle Dynamics with Decision Trees
   Max P. May, Oliver Sawodny
   Show (Yes/No): Comments:

10:39-10:52 Nonlinear Flatness-Based Observer for Vehicle Dynamics Control
   Simon Göltz, Daniel L. Ossig, Weixin Fu, Oliver Sawodny
   Show (Yes/No): Comments:

10:52-11:05 Dynamic Obstacles Avoidance Using Nonlinear Model Predictive Control
   Mukhtar Sani, Bogdan Robu, Ahmad Hably
   Show (Yes/No): Comments:
Room F

Wednesday, 13 October 2021
10:00 - 11:20

T051 - TT Electronic System on Chip and Embedded Control

Chairs: Timo Hämäläinen, Wolfgang Kastner

10:00-10:13 Is Arduino a suitable platform for sensor nodes?
Dominik Widhalm, Karl M. Goeschka, Wolfgang Kastner
Show (Yes/No): Comments:

10:13-10:26 Robust embedded MPC with reduced-precision arithmetic for cost-optimized implementations
Aitor del Rio Ruiz, Koldo Basterretxea
Show (Yes/No): Comments:

10:26-10:39 Opportunities For A Hardware-Based OPC UA Server Implementation In Industry 4.0
Zohra Charania, Chris Paul Iatrou, Valentin Khaydarov, Robert Wittig, Heiner Bauer, René Bachmann, Philipp Bauer, Christian Mayr, Gerhard Fettweis, Leon Urbas
Show (Yes/No): Comments:

Aleksandr Romanov, Nikolay Myachin, Andrei Sukhov
Show (Yes/No): Comments:

10:52-11:05 A Modern Approach to Application Specific Processors for Improving the Security of Embedded Devices
Dominik Meyer, Jan Haase, Marcel Eckert, Bernd Klauer
Show (Yes/No): Comments:

11:05-11:18 A Survey on System-on-a-Chip Design Using Chisel HW Construction Language
Matti Käyrä, Timo Hämäläinen
Show (Yes/No): Comments:
47th Annual Conference of the IEEE Industrial Electronics Society

Room G

Wednesday, 13 October 2021
10:00 - 11:20

T063 - TT Industrial Automation, Communication, Networking and Informatics

Chairs: Jan Haase, Alexander Fay

10:00-10:13 Exact analysis for basic multi-rate cyclic executives
  Reinder J. Bril
  Show (Yes/No): Comments:

10:13-10:26 Ontology-based approach for analyzing nuclear overall I&C architectures
  Antti Pakonen, Teemu Mätäsniemi
  Show (Yes/No): Comments:

10:26-10:39 Optimized Propagation Delay Compensation for an Improved 5G RAN Synchronization
  Maximilian Schüngel, Steven Dietrich, David Ginthör, Shun-Ping Chen, Michael Kuhn
  Show (Yes/No): Comments:

  Eric Chiquito, Ulf Bodin, Kåre Synnes
  Show (Yes/No): Comments:

10:52-11:05 AQUAMesh: A Low-Power Wide-Area Mesh Network protocol for Remote Monitoring Applications in Water Environments
  José Cecilio
  Show (Yes/No): Comments:

11:05-11:18 Evolutionary Algorithm for Incremental Scheduling in Systems of Systems with Real-Time Requirements
  Setareh Majidi, Roman Obermaisser
  Show (Yes/No): Comments:
47th Annual Conference of the IEEE Industrial Electronics Society

Room H

Wednesday, 13 October 2021
10:00 - 11:20

T124 - TT Signal and Image Processing and Computational Intelligence

Chairs: Jose A Antonino-Daviu, Hubert Razik

10:00-10:13 FF-GAT: Feature Fusion Using Graph Attention Networks
Ahmed N. Ahmed, Ali Anwar, Siegfried Mercelis, Steven Latré, Peter Hellinckx
Show (Yes/No): Comments:

10:13-10:26 Insight into Frequency-Domain Extrapolations of Least-Squares-Based Curve Fitting Algorithms
Weihua Zhou, Jef Beerten
Show (Yes/No): Comments:

10:26-10:39 Investigations on Numerical Techniques for Detecting Variations in Acoustic Emissions
Selvine George Mathias, Mathew John Mancha, Daniel Grossmann, Bernd Kujat, Kay Schiebold
Show (Yes/No): Comments:

10:39-10:52 Block Matching Mosaicing for Surface Inspection Using an Autonomous Mobile Robot
Sara Roos-Hoefgeest Toribio, Ignacio Alvarez Garcia, Rafael Corsino Gonzalez de los Reyes
Show (Yes/No): Comments:

10:52-11:05 Deep Learning for Postharvest Decay Prediction in Apples
Nikita Stasenko, Maxim Savinov, Valeriy Burlutskiy, Maria Pukalchik, Andrey Somov
Show (Yes/No): Comments:

11:05-11:18 Enhanced Seismic Deconvolution by Side Lobe Suppression
Ali Al-Shaikh, Bo Liu, Mohamed Mohandes, Huijian Li, Xu Liu, Ling Zhao
Show (Yes/No): Comments:
47th Annual Conference of the IEEE Industrial Electronics Society

Room I

Wednesday, 13 October 2021
10:00 - 11:20

T095 - TT Power Electronics & Energy Conversion

Chairs: Hasan KOMURCUGIL, Jacek Rabkowski

10:00-10:13 Disturbance Observer-Based Feedback Linearization Control for Stand-Alone Inverters
   Samantha Stephen, Hussain Shareef, Rachid Errouissi, Amulya Viswambharan
   Show (Yes/No): Comments:

10:13-10:26 A Robust Dynamic Compensator with Anti-windup Scheme for Grid-Interlinked Photovoltaic Inverter under Unbalanced Grid Voltages
   Amulya Viswambharan, Rachid Errouissi, Hussain Shareef, Samantha Stephen
   Show (Yes/No): Comments:

10:26-10:39 Understanding the Kelvin pin mitigation of the MOSFET turn-on losses by fast-switching and neutralization of the clamp diode
   Francesco Giorgio, Santi Agatino Rizzo, Nunzio Salerno, Giuseppe Scarcella, Alfio Scuto, Giuseppe Sorrentino
   Show (Yes/No): Comments:

10:39-10:52 Experimental characterization of materials with controlled Curie temperature for domestic induction heating applications
   Alberto Pascual, Jesus Acero, Claudio Carretero, Sergio Llorente
   Show (Yes/No): Comments:

10:52-11:05 Design of control strategy for active filter with 5-level CHB topology in delta connection
   Zdenek Kehl, Tomas Glasberger, Zdenek Peroutka
   Show (Yes/No): Comments:

11:05-11:18 A Comparative Study of Two Control Strategies for DC-DC Boost Converter Used in DC Microgrids
   Qihao Guo, Imen Bahri, Demba Diallo
   Show (Yes/No): Comments:
47th Annual Conference of the IEEE Industrial Electronics Society

Room J

Wednesday, 13 October 2021
10:00 - 11:20

T103 - TT Power Systems and the Smart Grid

Chairs: Mo-Yuen Chow, Narayana Prasad Padhy

10:00-10:13 Parameter Extraction of Power Entry Filters Using Probabilistic Approach
Duc-Thanh Do, Holger Hirsch
Show (Yes/No): Comments:

10:13-10:26 Emulation of Complex Grid Scenarios by using Power Hardware In the Loop (PHIL) Techniques
Javier Roldan-Perez, Diana Moran-Rio, Dionysios Moutevelis, Pablo Rodriguez-Ortega, Njegos Jankovic, Mohammad Ebrahim Zarei, Milan Prodanovic
Show (Yes/No): Comments:

10:26-10:39 A Neural Network Approach for Efficient Finite Control Set MPC of Cascaded H-Bridge STATCOM
Francesco Simonetti, Giovanni Domenico Di Girolamo, Alessandro D'Innocenzo, Carlo Cecati
Show (Yes/No): Comments:

10:39-10:52 Robust SoC Balancing Method for Distributed Storage based Islanded Microgrids
Sidlawendé Ouoba, Azeddine Houari, Mohamed Machmoum
Show (Yes/No): Comments:

10:52-11:05 Hardware In The Loop Simulation of the Smart Grid with the inclusion of IEC61850 Communication Protocol
Harshavardhan Palahalli, Marziyeh Hemmati, Enrico Ragaini, Giambattista Gruosso
Show (Yes/No): Comments:

11:05-11:18 Home EMS controlled by Neural Networks
Pedro Pereira, João Freire
Show (Yes/No): Comments:
S251 - SS DataDriven Techniques Applicable to Smart Battery Management System to Improve Effective Battery Usage, Safety, and Reliability

Authors: Janamejaya Channegowda, Flah Aymen

10:00-10:13 Comparing Switching Losses for Automatic and Program-Based Switched Capacitor Model for Active Cell Balancing
   Gairik Das, Vipin Valsan

10:13-10:26 In-situ Parameter Identification of Cells in Grid-Connected Batteries
   Thomas L Fantham, Daniel T Gladwin

10:26-10:39 Isolated Semi Integrated On-board Charger for EVs Equipped with 6-phase Traction Drives
   Paolo Pescetto, Gianmario Pellegrino

10:39-11:05 SOH diagnostic and prognostic based on external health indicator of Lithium-ion battery
   Enhui Liu, Niu Guangxing, Xuan Wang, Bin Zhang

   Caniggia Viana, Sepehr Semsar, Mehanathan Pathmanathan, Peter Lehn
S381 - SS Hybrid Control Techniques and Topologies for Multilevel Power Converters

Chairs: Mohammad SHARIFZADEH, Hadi Y. KANAAN

10:00-10:13  Digitization Effect in Implementation of Hybrid Modulation Technique in CHBMLI
Vishal Jain, Rajesh Gupta

10:13-10:26  A nine-level PEC based Active Power Filter With Double-Frequency Oscillation Cancellation (DFOC) Ability In Reference Current Detection
Ali Zafari

Majid Mehrasa, Mohammad Babaie, Mohammad Sharifzadeh, Seddik Bacha, Kamal Al-Haddad

Erfan Azimi, Mohammad Sharifzadeh, Majid Mehrasa, Kamal Al-Haddad

10:52-11:05  Optimal Switching Sequence MPC for Hybrid Flying Capacitor Inverter
Margarita Norambuena, Guillermo Huerta, Pablo Lezana, Andres Mora

11:05-11:18  Magnetic Shielding as Core material in Planar Inductors
Alex Fihl Hedegaard Nielsen, Anders Juhl Jørgensen, Ziwei Ouyang
47th Annual Conference of the IEEE Industrial Electronics Society

Room M

Wednesday, 13 October 2021
10:00 - 11:20

S432 - SS IoT Automation Technologies, Tools and Applications

Chairs: Pal Varga, Federico Montori

10:00-10:13 An AAS Modeling Tool for Capability-Based Engineering of Flexible Production Lines
   Yining Huang, Saadia Dhouib, Jacques Malenfant
   Show (Yes/No): Comments:

10:13-10:26 Two-way Integration of Service-Oriented Systems-of-Systems with the Web of Things
   Ivan Zyrianoff, Lorenzo Gigli, Federico Montori, Carlos Kamienski, Marco Di Felice
   Show (Yes/No): Comments:

10:26-10:39 Interoperability for Industrial Internet of Things Based on Service-oriented Architecture
   An Ngoc Lam, Øystein Haugen, Jerker Delsing
   Show (Yes/No): Comments:

10:39-10:52 Web of Things Interoperability for the Arrowhead Framework
   Junior Dongo, Michele Albano, Arne Skou, Brian Nielsen
   Show (Yes/No): Comments:

10:52-11:05 A Toolchain Architecture for Condition Monitoring Using the Eclipse Arrowhead Framework
   Federico Montori, Zyrianoff Ivan, Gigli Lorenzo, Riccardo Venanzi, Simone Sindaco, Federica Zonzini, Nicola Testoni, Marco Di Felice, Luca De Marchi, Tullio Salmon Cinotti
   Show (Yes/No): Comments:

11:05-11:18 Enabling Industrial Motion Control through IIoT Multi-Agent Communication
   Razvan Luchian, Sabin Rosioru, Iulia Stamatescu, Ioana Fagarasan, Grigore Stamatescu
   Show (Yes/No): Comments:
**Room N**

Wednesday, 13 October 2021
10:00 - 11:20

**S152 - SS Advances in Renewable Energy Systems Condition Monitoring and Prognosis using Machine Learning**

**Chairs:** Mohamed Benbouzid, Sinisa Durovic

10:00-10:13  **Renewable Energy Systems Prognostics and Health Management: A Review of Recent Advances**  
*Lotfi Saidi, Mohamed Benbouzid*

Show (Yes/No):  
Comments:

10:13-10:26  **Sequence-To-Sequence Health Index Estimation of Rolling Bearings with Long-Short Term Memory and Transfer Learning**  
*Tarek Berghout, Mohamed Benbouzid, Leila-Hayet Mouss*

Show (Yes/No):  
Comments:

10:26-10:39  **Fault Detection in Soft-started Induction Motors using Convolutional Neural Network Enhanced by Data Augmentation Techniques**  
*Dario Pasqualotto, Angela Navarro, Vicente Biot-Monterde, Mauro Zigliotto, Jose Antonino-Daviu*

Show (Yes/No):  
Comments:

*Tarek Berghout, Mohamed Benbouzid, Xiandong Ma, Sinis&Djurovic#780; Leila-Hayet Mouss*

Show (Yes/No):  
Comments:

10:52-11:05  **Machine Learning Experiments for a Real-Time Energy Management in a Microgrid Cluster**  
*David Rosero-Bernal, Enrique A. Sanabria-Torres, Fabio Andrade-Rengifo, Nelson L. Diaz, Cesar L. Trujillo*

Show (Yes/No):  
Comments:

11:05-11:18  **Extended Speed Range Control for a Current Source Inverter Variable Speed Drive**  
*Giovanni Migliazza, Emilio Carfagna, Giampaolo Buticchi, Fabio Immovilli, Emilio Lorenzani*

Show (Yes/No):  
Comments:
T0413 - TT Electrical Machines and Drives

Chairs: Qingsong Wang, Chunyan Lai

11:30-11:43 Power Hardware-in-the-Loop based Emulation of An Induction Machine with Stator Winding Faults
   Yupeng Liu, Lebohang Ralikalakala, Paul Barendse, Pragasen Pillay
   Show (Yes/No): Comments:

11:43-11:56 Detection of Broken Rotor Bars in Induction Motors through the k-NN Algorithm Combined with a Deterministic-Stochastic Subspace Method for System Identification
   Raissa Raimundo da Silva, Mateus Giesbrecht
   Show (Yes/No): Comments:

11:56-12:09 Analysis of Open Phase and Phase-to-Phase Short Circuit Fault of PMSM for Electrical Propulsion in an eVTOL
   John Ramoul, Gayan Watthewaduge, Alan Dorneles Callegaro, Babak Nahid-Mobarakeh, Armen Baronian, Ali Emadi
   Show (Yes/No): Comments:

12:09-12:22 High-Frequency Signal Injection Based Adaptive Full-Order Observer for Low-Speed Sensorless IPMSM Drives
   Cesar José Volpato Filho, Rodrigo Padilha Vieira
   Show (Yes/No): Comments:

12:22-12:35 Adaptive Flux Weakening Controller for Dual Three-Phase PMSM Drives in Vector Space Decomposition
   Show (Yes/No): Comments:

   Sumeet Singh, Pragasen Pillay
   Show (Yes/No): Comments:
S361 - SS High Power Multilevel Converters
Topologies, Combination of Converters, Modulation and Control

Chairs: Alain Sanchez, Iosu Marzo

11:30-11:43 Reactive Power Limits of Single-Phase and Three-Phase DC-Link VSC STATCOMs under Negative-Sequence Voltage and Current
Iosu Marzo, Jon Andoni Barrena, Alain Sanchez-Ruiz, Gonzalo Abad, Ignacio Muguruza
Show (Yes/No): Comments:

11:43-11:56 Error Tolerance Analysis for SHE-PWM Calculation in a 3L-NPC Converter
Irati Ibanez-Hidalgo, Alain Sanchez-Ruiz, Angel Perez-Basante, Salvador Ceballos, Asier Zubizarreta, Yunwei Li, Zhongyi Quan
Show (Yes/No): Comments:

11:56-12:09 Methodology to Compare Meta-heuristic Algorithms to Solve Selective Harmonic Elimination-PWM and Optimal Pulse Pattern Formulations
Irati Ibanez-Hidalgo, Izaskun Oregi, Sergio Gil-Lopez, Angel Perez-Basante, Alain Sanchez-Ruiz, Ainhoa Pujana, Asier Zubizarreta, Salvador Ceballos
Show (Yes/No): Comments:

12:09-12:22 Target Current Modulation as a Novel Approach for Active Balancing in Automotive MMSPCs
Tobias Merz, Nils Hellmann, Eduard Specht, Marc Hiller
Show (Yes/No): Comments:

12:22-12:35 Experimental Comparative Analysis of Efficiency and THD for a Three-phase Five-level Cascaded H-Bridge inverter Controlled by Several MC-PWM Schemes
Giuseppe Schettino, Claudio Nevoloso, Rosario Miceli, Antonino Oscar Di Tommaso, Gioacchino Scaglione, Carlo Cecati, Concettina Buccella
Show (Yes/No): Comments:

12:35-12:48 Electromagnetic Losses Minimization in High-Speed Flywheel Energy Storage Systems
Andrea Floris, Alfonso Damiano, Alessandro Serpi
Show (Yes/No): Comments:
Welcome by IEEE IES President and Introduction to the IEEE IES Student & Young Professionals (S&YP).
Prof. Marek Jasinski, Warsaw University of Technology, Poland, IEEE IES S&YP Activity Committee
Prof. Terry Martin, University of Arkansas, USA, IEEE IES President
Prof. Sheldon Williamson, OntarioTech University, Canada, IEEE IECON General Chairperson

S&YP – 3 Minutes Speeches.
Chair: Hani Vahedi, Andrii Chub, Marek Turzynski
47th Annual Conference of the IEEE Industrial Electronics Society

Room D

Wednesday, 13 October 2021
11:30 - 12:50

T082 - TT New Technologies for Electric Transportation

Chairs: Ritesh keshri, Giambattista Gruosso

11:30-11:43 Adaptive Voltage Controller for Flux-weakening Operation in PMSM Drives
  Zisui Zhang, Babak Nahid-Mobarakeh, Ali Emadi
  Show (Yes/No): Comments:

11:43-11:56 Electric Vehicle Smart Charging to Maximize Renewable Energy Usage in a Single Residence
  Kartik V. Sastry, Thomas F. Fuller, Santiago Grijalva, David G. Taylor, Michael J. Leamy
  Show (Yes/No): Comments:

11:56-12:09 Non-Dominated Sorting Genetic Algorithm Based Determination of Optimal Torque Split Ratio for a Dual-Motor Electric Vehicle
  Marco Veliz Castro, Shruthi Mukundan, Claudio Lopes Filho, Glenn Byczynski, Bruce Minaker, Jimi Tjong, Narayan Kar
  Show (Yes/No): Comments:

12:09-12:22 SoC Estimation Techniques for Efficient Agricultural Robots
  German Monsalve, Alben Cardenas, Wilmar Martinez
  Show (Yes/No): Comments:

12:22-12:35 Mission Profile-Oriented Active Thermal Control of a Bidirectional Three-Level Buck-Boost GaN-Based DC-DC Converter for Electric Vehicles Powertrains
  Christian A. Rojas, Ruben Gonzalez, Leonardo Callegaro, Hector Young
  Show (Yes/No): Comments:

12:35-12:48 Pack-Level Electrochemical Impedance Spectroscopy in EV Batteries Enabled by a DC Fast Charger
  Zhe Gong, Seyed A. Assadi, Seif Sarofim, Michelle Tessy, Dylan Lamont, Aurora Nowicki, Joshua Piruzza, Khalid Fatih, Yeong Yoo, Olivier Trescases
  Show (Yes/No): Comments:
47th Annual Conference of the IEEE Industrial Electronics Society

Room E

Wednesday, 13 October 2021
11:30 - 12:50

T0211 - TT Control System, Robotics and Automation

Chairs: Valeriy Vyatkin, Gabor Sziebig

11:30-11:43 Control of a Sun Tracking Robot Based on Adaptive Sliding Mode Control with Kalman Filtering and Model Predictive Control
   Jan-Philip Rehbein, Benedikt Haus, Paolo Mercorelli
   Show (Yes/No): Comments:

11:43-11:56 Inferring Cost Functions Using Reward Parameter Search and Policy Gradient Reinforcement Learning
   Emir Arditi, Tjasa Kunavar, Emre Uğur, Jan Babic, Erhan Oztop
   Show (Yes/No): Comments:

11:56-12:09 Cascaded Kalman Filters for a Sliding Mode Control in a Peltier Structure for a Innovative Manufacturing System
   Felix van Rossum, Benedikt Haus, Paolo Mercorelli, Andreas Zedler
   Show (Yes/No): Comments:

12:09-12:22 Multi-Quadcopter Formation Control Using Sampled-Data Event-Triggered Communication With Gain Optimization
   Zipeng Huang, Ya-Jun Pan, Robert Bauer
   Show (Yes/No): Comments:

12:22-12:35 A Comparative Study of Sliding-Mode-Based Control Strategies of a Quad-Rotor UAV
   Enrique Paiva, Hector Fretes, Jorge Rodas, Maarouf Saad, Yassine Kali, Jose Luis Lesme, Fernando Lesme
   Show (Yes/No): Comments:

12:35-12:48 Robust Predictor Feedback Input Delay Compensation with Application to Daylight Harvesting Control
   Afagh Mohagheghi, Mehrdad Moallem
   Show (Yes/No): Comments:
T074 - TT Motion Control and Mechatronics

Chairs: Michael Ruderman, Antonio Luque

11:30-11:43  Trajectory Planning and Sliding-Mode Velocity Control for an Under-Actuated Hovercraft Vehicle
   Lukas Pröhl, Harald Aschemann
   Show (Yes/No): Comments:

11:43-11:56  Damping Controller Design for a DFIM-based Shredder Drive using H-Infinity Optimization
   Florian Bendrat, Constantinos Sourkounis
   Show (Yes/No): Comments:

11:56-12:09  Model Predictive Control of a High Power Rolling-Mill Drive Considering Shaft Torque Constraints
   Daniel Binder, Florian Bendrat, Constantinos Sourkounis
   Show (Yes/No): Comments:

12:09-12:22  Acceleration feedback concepts for dynamic emulation of mechanical loads
   Michael Epp, Martin Griese, Thomas Schulte
   Show (Yes/No): Comments:

12:22-12:35  Coil Switching and Control of an Iron Core Moving Magnet Linear Motor
   Pai-Hsueh Yang, Koichi Sakata, Gaurav Keswani
   Show (Yes/No): Comments:

12:35-12:48  On the Design and Development of Vision-Based Autonomous Mobile Manipulation
   Shafiqul Islam, Jorge Dias, Anderson Sunda-Meya
   Show (Yes/No): Comments:
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Room G

Wednesday, 13 October 2021
11:30 - 12:50

T066 - TT Industrial Automation, Communication, Networking and Informatics

Chair: Jan Haase, Luis Gomes

11:30-11:43 Towards a Quantitative Time Analysis and Decision Support for the Deployment of AI-Algorithms in Distributed Cyber-Physical Production Systems
Dominik Hujo, Birgit Vogel-Heuser, Marius Krüger, Fabian Schuhmann

Show (Yes/No): Comments:

11:43-11:56 Accelerating of Feature Recognition of Weld Joints in Siemens NXOpen with Numba JIT and Parallelization
Tuan Tran, Andrei Lobov

Show (Yes/No): Comments:

11:56-12:09 Worst-Case Stealthy False-Data Injection Attacks on Remote State Estimation
Jing Zhou, Jun Shang, Tongwen Chen

Show (Yes/No): Comments:

12:09-12:22 Decision Graph and Matrix Visualization during Interdisciplinary Engineering Collaboration
Haya Elaraby, Xintong He, Minjie Zou, Alison Olechowski, Dorothea Pantförder, Greg Jamieson, Birgit Vogel-Heuser

Show (Yes/No): Comments:

12:22-12:35 Data-driven Bottom-up Cluster-tree Formation based on the IEEE 802.15.4/ZigBee Protocols
Miguel Lino Ferreira Neto, Carlos Barros Montez, Erico Leão, Aujor Tadeu Cavalca Andrade

Show (Yes/No): Comments:
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Room H

Wednesday, 13 October 2021
11:30 - 12:50

T125 - TT Signal and Image Processing and Computational Intelligence

Chairs: Yang Shi, Mohammad Babaei

11:30-11:43  Learned Gradient Descent Performance in Bicubic Super-Resolution Task
Iaroslav Koshelev, Andrey Somov
Show (Yes/No): Comments:

Narges Manouchehri, Nizar Bouguila
Show (Yes/No): Comments:

Roozbeh Razavi-Far, Ehsan Hallaji, Maryam Farajzadeh-Zanjani, Ranim Aljoudi, Mehrdad Saif
Show (Yes/No): Comments:

12:09-12:22  3D Printing Deformation Estimation Using Artificial Vision Strategies for Smart-Construction
Juan Villacrés, Robert Guamán, Oswaldo Menéndez, Fernando Auat Cheein
Show (Yes/No): Comments:

12:22-12:35  Time Optimal Operation of Flexural Ultrasonic Transducers For Enhanced Ranging
Aravind B. Balasubramanian, Kartik V. Sastry, David P. Magee, David G. Taylor
Show (Yes/No): Comments:

12:35-12:48  3-D Ultrasonic Sensing in Air with a Narrowband Transmitter and a Receiver Microphone Array
Aravind B. Balasubramanian, David P. Magee, David G. Taylor
Show (Yes/No): Comments:
Room I

Wednesday, 13 October 2021
11:30 - 12:50

T099 - TT Power Electronics & Energy Conversion

Chairs: Akshay Rathore, Kamal Al-Haddad

Vikram Roy Chowdhury, Rajendra Prasad Kandula, Deepak Divan
Show (Yes/No): Comments:

11:43-11:56 Analytical EMI Modeling of an Active Neutral Point Clamped Inverter
Fatemeh AbolqasemiKharanaq, Ali Emadi, Berker Bilgin
Show (Yes/No): Comments:

11:56-12:09 Enhancement of A Photovoltaic Inverter Efficiency Using A Shade-Tolerant MPPT
Seyedkazem Hosseini, Shamsodin Taheri, Edris Pouresmaeil, Diego Espinoza-Trejo
Show (Yes/No): Comments:

12:09-12:22 BEM Model Extended to Analyze the Performance of Medium and Large Size Wind Turbines
Hercules Oliveira, Jose De Matos, Luiz Ribeiro, Osvaldo Saavedra, Cesar Branco
Show (Yes/No): Comments:

12:22-12:35 Lyapunov Energy Function Based Control of a PV Based Current Source Inverter under Unbalanced Grid Voltage Condition
Vikram Roy Chowdhury, Md Multan Biswas, Dhiman Chowdhury
Show (Yes/No): Comments:

12:35-12:48 A Bidirectional DC-DC Converter with High Conversion Ratios for the Electrical Vehicle Application
Reza Rezaii, Mohammad Nilian, Md Safayatullah, Sumana Ghosh, Issa Batarseh
Show (Yes/No): Comments:
T105 - TT Power Systems and the Smart Grid

Chairs: Imad Mougharbel, Nazih Moubayed

11:30-11:43 Artificial Neural Network Aided Cable Resistance Estimation in Droop-Controlled Islanded DC Microgrids
   Habibu Hussaini, Tao Yang, Yuan Gao, Cheng Wang, Mohamed A. A. Mohamed, Serhiy Bozhko
   Show (Yes/No): Comments:

11:43-11:56 Real-time Model Development of the IEEE Benchmark Distribution Feeder Test System for Microgrid Stability and Controls
   Hamed Nademi, James Choi, Pratay Adhikari, Luigi Vanfretti, Shehab Ahmed, Kourosh Sedghisigarchi
   Show (Yes/No): Comments:

11:56-12:09 Distributed Cooperative LFC Protocols for Regulation Synchronization for Networked Multi-area Power Grid Networks
   Shafiqul Islam, Anderson Sunda-Meya, Jorge Dias
   Show (Yes/No): Comments:

12:09-12:22 Robust Adaptive Load Frequency Control for Multi-area Power System Grid Networks with Uncertainty
   Shafiqul Islam, Anderson Sunda-Meya
   Show (Yes/No): Comments:

12:22-12:35 Anomaly Detection In Smart Grids Using Machine Learning
   Prem kumar reddy Shabad, Abdulmueen Alrashide, Osama Mohammed
   Show (Yes/No): Comments:
S582 - SS Power Electronics Converters for Green Energy Supplies Topology, Modeling, Control, and Stability Analysis

Chairs: Nitin Gupta, Man Mohan Garg
11:30-11:43 Dynamic Modelling Requirements for Tuning of Cascaded Voltage and Current Loops in VSMs
   Shuan Dong, Yu Christine Chen
   Show (Yes/No): Comments:

11:43-11:56 On the Analysis of Quasi-Discontinuous Modulations for Dual-Active-Bridge
   Pablo Guzman, Nimrod Vazquez, Marco Liserre, Rodolfo Oroso, Jaime Arau, Claudia Hernandez
   Show (Yes/No): Comments:

11:56-12:09 Modeling and Simulation of a Reduced-Order Single-Phase PQ Inverter Using the Dynamic Phasor Method
   Udoka C. Nwaneto, Andrew M. Knight
   Show (Yes/No): Comments:

12:09-12:22 Dynamic Phasor Modeling and Control of a Single-Phase Single-Stage Grid-Connected PV System
   Udoka C. Nwaneto, Andrew M. Knight
   Show (Yes/No): Comments:

12:22-12:35 A Coupled Inductor-Based Dual-Switch High Step-up DC-DC Converter with Common Ground
   Saeed Habibi, Ramin Rahimi, Mehdi Ferdowsi, Pourya Shamsi
   Show (Yes/No): Comments:

12:35-12:48 Experimental Comparison of High-Power Soft-Switching Boost Converters with Auxiliary Switches
   Minh-Khai Nguyen, Nima Abdolmaleki, Jianfei Chen, Caisheng Wang, Zhigang Yao, Shilei Zhou, Jiaoke Zheng
   Show (Yes/No): Comments:
S382 - SS Hybrid Control Techniques and Topologies for Multilevel Power Converters

Chairs: Mohammad SHARIFZADEH, Kamal Al-Haddad

11:30-11:43 Novel Switched-Capacitor Compact Multilevel Converter Based on Packed E-Cell Design with Fault Tolerant Operation

Mohammad Sharifzadeh, Mohammadali Ahmadijokani, Majid Mehrasa, Mahdieh Sadabadi, Kamal Al-Haddad

Show (Yes/No): Comments:

11:43-11:56 A Novel Sensor-less Voltage Balancing on PUC5 to Reduce the Size of Flying Capacitor

Saeed Arazm, Rawad Zgheib, Kamal Al-Haddad

Show (Yes/No): Comments:

11:56-12:09 Grid Integration of an enhanced Packed E-Cell Inverter for Renewable Energy Applications

Erfan Azimi, Majid Mehrasa, Mohammad Sharifzadeh, Leopoldo Franquelo, Seddik Bacha, Kamal Al-Haddad

Show (Yes/No): Comments:

12:09-12:22 Systematic Design of Improved Lead-Lag Direct Power Model Predictive Controller for Multilevel Active-Front-End Rectifier: A Comparative Study

Mostafa Abarzadeh, Armin Ebrahimian, Waqar A. Khan, Nathan Weise, Kamal Al-Haddad

Show (Yes/No): Comments:

12:22-12:35 Efficiency Analysis of Conduction Losses in Modular Multilevel Converters with Parallel Functionality

Nima Tashakor, Bita Arabsalmanabadi, Yi Zhang, Kamal Al-Haddad, Stefan Goetz

Show (Yes/No): Comments:

12:35-12:48 Parameter Estimation of Batteries in MMCs with Parallel Connectivity using PSO

Bita Arabsalmanabadi, Nima Tashakor, Yi Zhang, Kamal Al-Haddad, Stefan Goetz

Show (Yes/No): Comments:
47th Annual Conference of the IEEE Industrial Electronics Society

Room M

Wednesday, 13 October 2021
11:30 - 12:50

S024 - SS Advanced Control of GridConnected Converters for Distributed Generation and Power Quality

Chairs: Hadi Y. KANAAN, Fadia SEBAALY

11:30-11:43 Adaptive Virtual Inertia Synthesis via Enhanced Dispatchable Virtual Oscillator Controlled Grid-Tied Inverters
   Sima Azizi Aghdam, Mohammed Agamy
   Show (Yes/No): Comments:

11:43-11:56 Self-synchronization Scheme for Network of Grid-following and Grid-forming Photovoltaic Inverters
   Shantanu Gupta, Muhammad F. Umar, Mohammad B. Shadmand, Sudip Mazumder
   Show (Yes/No): Comments:

11:56-12:09 Model predictive control for single-stage grid-tied three-port dc-dc-ac converter based on dual active bridge and interleaved boost topology
   Md Safayatullah, Sumana Ghosh, Sahin Gullu, Issa Batarseh
   Show (Yes/No): Comments:

12:09-12:22 Fault-Tolerant Z-Source-based Isolated DC-DC Building Blocks for Mission-Critical DC Distribution Applications
   Hussain Sayed, Harish S. Krishnamoorthy
   Show (Yes/No): Comments:

12:22-12:35 Isolated Quasi-Switched Boost Series Resonant DC-DC Converter
   Minh-Khai Nguyen, Truong-Duy Duong, Anh-Dung Nguyen, Caisheng Wang, Young-Cheol Lim, Joon-Ho Choi
   Show (Yes/No): Comments:

12:35-12:48 AC/DC Converter based on Dual Active Bridge with Reactive Power Management
   Pablo Guzman, Nimrod Vazquez, Marco Liserre, Rodolfo Orosco, Jaime Arau, Claudia Hernandez
   Show (Yes/No): Comments:
47th Annual Conference of the IEEE Industrial Electronics Society

Room A
Thursday, 14 October 2021
07:00 - 08:20

T042 - TT Electrical Machines and Drives

Chairs: Xuan Wang, Christopher H. T. Lee

07:00-07:13 Analysis of Vernier Machine with Stator-V-Shaped Permanent-Magnet Arrangement
Fawen Shen, Yuming Yan, Shanmukha Ramakrishna, Chandana Jayampathi Gajanayake, Shuai Wang, Christopher H. T. Lee
Show (Yes/No): Comments:

07:13-07:26 Design of a Decoupled Double-Stator Flux-Switching Permanent-Magnet Rotary-Linear Motor with Two Degree-of-Freedom Motion
Yaojie He, Hao Chen, Christopher H. T. Lee
Show (Yes/No): Comments:

07:26-07:39 Harmonic Reduction for Two-Slot Pitch Winding Permanent Magnet Vernier Machines with Stator Shifting Technique
Shuangchun Xie, Hao Chen, Libing Cao, Yuefei Zuo, Xin Yuan, Boon Siew Han, Chi Cuong Hoang, Christopher H. T. Lee
Show (Yes/No): Comments:

07:39-07:52 A Novel Fault Tolerant Flux Switching Memory Machine with Highly Flux Controllability
Yuming Yan, Fawen Shen, Ramakrishna Shanmukha, Chandana Jayampathi Gajanayake, Shuai Wang, Christopher H.T. Lee
Show (Yes/No): Comments:

07:52-08:05 Position Sensorless Torque Ripple Control of Switched Reluctance Motor Drive using B-Spline Neural Network
Chetan S. Matwankar, Sumit Pramanick, Bhim Singh
Show (Yes/No): Comments:

08:05-08:18 The Online Stator Winding Insulation Monitoring for PMSG-PWM rectifier System under Various Working Conditions
Dayong Zheng, Geye Lu, Yanyong Yang, Qinghao Zhang, Pinjia Zhang
Show (Yes/No): Comments:
S621 - SS Power Electronics for Transportation Electrification Applications

Chairs: Tárcio André dos Santos Barros, Marcelo Vinícius de Paula

07:00-07:13  Design and Analysis of 10 kW Electric Vehicle Charging Station
  Indranil Banerjee, Mayank Mukesh, Shivam Prakash Gautam, Vikas Kumar
  Show (Yes/No): Comments:

07:13-07:26  Simulation Assessment of the Impact of Pulsed Loads in DC Shipboard Microgrid
  Luona Xu, Baoze Wei, Yun Yu, Juan C. Vasquez, Josep M. Guerrero
  Show (Yes/No): Comments:

07:26-07:39  A review on single-phase, single-stage OBC topologies for EVs with 48~V powertrains
  Thilini Wickramasinghe, Bruno Allard, Nicolas Allali
  Show (Yes/No): Comments:

07:39-07:52  Efficiency Evaluation of Six-Phase VSI and NSI for 400V and 800V Electric Vehicle Powertrains
  Saif Absar, Wesam Taha, Ali Emadi
  Show (Yes/No): Comments:

07:52-08:05  Performance Evaluation of Space Vector PWM Methods with DC Link Voltage Control for EV/HEV Powertrains
  Haleema Qamar, Hafsa Qamar, Rajapandian Ayyanar
  Show (Yes/No): Comments:
47th Annual Conference of the IEEE Industrial Electronics Society

Room C

Thursday, 14 October 2021
07:00 - 08:20

T111 - TT Sensors, Actuators, Systems Integration and Nano-technologies

Chairs: Mingsi Tong, Qingsong Xu

07:00-07:13 Design and Analysis of a Piezoelectric-Actuated Biaxial Asymmetrical Compliant Micromanipulator
   Zekui Lyu, Qingsong Xu
   Show (Yes/No): Comments:

07:13-07:26 A New Closed-barrier Covering Optimization Method for Heterogeneous Nodes in Hybrid Wireless Sensor Networks
   Peng Wang, Yonghua Xiong, Jinhua She
   Show (Yes/No): Comments:

07:26-07:39 Payload Estimation for Hydraulic Excavators Using a Depth Camera
   Hiroshi Yoshida, Tatsuya Yoshimoto
   Show (Yes/No): Comments:

   Digvijay Singh, Rishabh Singh, Rahul Ajmeria, Manik Gupta, Ponnalagu R N
   Show (Yes/No): Comments:

07:52-08:05 Development of a Magnetic Absolute Encoder Using Eccentric Structure and Long Short-Term Memory
   Akishi Takeyama, Shota Komatsuzaki, Keita Sado, Yuki Nagatsu, Hideki Hashimoto
   Show (Yes/No): Comments:

08:05-08:18 Smart home wireless sensor networks lifetime optimizing using Q-learning.
   Ismael Jrhilifa, Hamid Ouadi, Abdelilah Jilbab
   Show (Yes/No): Comments:
S061 - SS Advanced Technologies for Inductive Power Transfer

Chairs: Chaoqiang Jiang, Teng Long

07:00-07:13 Analysis of Inductor Current for Series Resonant Tank at Different Practical Operating Conditions
  Sayan Sarkar, Wing Hung ki, Yao Yuan
  Show (Yes/No): 
  Comments:

07:13-07:26 Resonant Frequency Characteristics of a Wireless Power Transfer System based on Dual-Receiver Configuration without Cross Coupling
  Shohei Komeda, Rin Arai
  Show (Yes/No): 
  Comments:

07:26-07:39 An Online Switching Frequency Modulation for Power Fluctuation Minimization of Non-Stationary Wireless Power Transfer
  Weizhou Ye, Jannis Noeren, Lukas Elbracht, Nejila Parspour
  Show (Yes/No): 
  Comments:

07:39-07:52 A measurement method for the characterization of the ferromagnetic bottom layer of cookware used in domestic induction heating
  Felix Rehm, Patrick Breining, Marc Hiller
  Show (Yes/No): 
  Comments:

07:52-08:05 Effect of Hybrid Modulation on Performance of Wireless Battery Charger Operating in CC/CCV Mode
  Deniss Stepins, Kathari Neeraja, Janis Zakis, Oleksandr Husev, Bohdan Pakhaliuk, Victor Shevchenko
  Show (Yes/No): 
  Comments:

08:05-08:18 Computational Feasibility of Multi-objective Optimal Design Techniques for Grid-Connected Multi-cell Solid-State-Transformers
  Jaydeep Saha, Naga Brahmandra Yadav Gorla, Aravinth Subramaniam, Sanjib Kumar Panda
  Show (Yes/No): 
  Comments:
T022 - TT Control System, Robotics and Automation

7:00-7:13 Two-Phase Jointly Optimal Strategies and Winning Regions of the Capture-the-Flag Game
Zhao Zhou, Jiahao Huang, Jiapeng Xu, Yang Tang
Show (Yes/No): Comments:

7:13-7:26 Investigation on Fractional Order Controller Using Ball-and-Beam System
Monika Sharma, Bharat Singh Rajpurohit
Show (Yes/No): Comments:

7:26-7:39 Robust Stackelberg Strategy for Stochastic LPV Systems and Application to Wind Power Generator
Muneomi Sagara, Hiroaki Mukaidani, Hua Xu
Show (Yes/No): Comments:

7:39-7:52 Fault and Attack Collaborative Detection for Cyber-Physical System in Complex Network Environment using Delta Operator
Zheng Du, Li Zhang, Mengkai Liu, Jianxun Zhou, Duanjin Zhang
Show (Yes/No): Comments:

7:52-8:05 Configuration-aware Model Predictive Motion Planning in Narrow Environment for Autonomous Tractor-trailer Mobile Robot
Nobuaki Ito, Hiroyuki Okuda, Shinkichi Inagaki, Tatsuya Suzuki
Show (Yes/No): Comments:

8:05-8:18 Inertial-Kinect Fusion for Robot Navigation based on the Extended Kalman Filter
Xiaoyue Sang, Zhaohui Yuan, Xiaojun Yu
Show (Yes/No): Comments:
T072 - TT Motion Control and Mechatronics

Chairs: Changzhu ZHANG, Chuanzhi Zang

07:00-07:13 Absolute Angle Calculation for Magnetic Encoder Based On Magnetic Flux Density Difference
   Shota Komatsuzaki, Akishi Takeyama, Keita Sado, Yuki Nagatsu, Hideki Hashimoto
   Show (Yes/No): Comments:

07:13-07:26 Band-Stop Bandwidths Adjustment for a Periodic Disturbance Observer
   Hiroki Tanaka, Hisayoshi Muramatsu
   Show (Yes/No): Comments:

07:26-07:39 A Study on Motor Control Method within Temperature Limit of Coil for Improving Motor Performance
   Kenta Iizuka, Yuki Nagatsu, Hideki Hashimoto
   Show (Yes/No): Comments:

07:39-07:52 Design of Trajectory Generator of a Glass Facade Cleaning Robot
   Kouki Kanbe, Shunsuke Nansai, Hiroshi Itoh
   Show (Yes/No): Comments:

07:52-08:05 Imitation learning for variable speed motion generation over multiple actions
   Yuki Saigusa, Ayumu Sasagawa, Sho Sakaino, Toshiaki Tsuji
   Show (Yes/No): Comments:

08:05-08:18 Implementation of assembly task based on guided policy search algorithm
   Qingwei Dong, Chuanzhi Zang, Peng Zeng, Guangxi Wan, Yunpeng He, Xiaoting Dong
   Show (Yes/No): Comments:
47th Annual Conference of the IEEE Industrial Electronics Society

Room G
Thursday, 14 October 2021
07:00 - 08:20

T062 - TT Industrial Automation, Communication, Networking and Informatics

Chairs: Ye Zhao, Qimin Xu

07:00-07:13 Highest Wellbore Stability Obstacle Avoidance Drilling Trajectory Optimization in Complex Multiple Strata Geological Environment
   Jiafeng Xu, Xin Chen, Min Wu, Weihua Cao
   Show (Yes/No):  Comments:

07:13-07:26 Clock Synchronization Based on Non-Parametric Estimation Considering Dynamic Delay Asymmetry
   Yafei Sun, Qimin Xu, Xiang Chen, Qiwen Yun, Cailian Chen
   Show (Yes/No):  Comments:

07:26-07:39 Flexible Switching Architecture with Virtual-Queue for Time-Sensitive Networking Switches
   Qiwen Yun, Qimin Xu, Yanzhou Zhang, Yingxiu Chen, Yafei Sun, Cailian Chen
   Show (Yes/No):  Comments:

07:39-07:52 CANS: Communication Limited Camera Network Self-Configuration for Intelligent Industrial Surveillance
   Jingzheng Tu, Qimin Xu, Cailian Chen
   Show (Yes/No):  Comments:

07:52-08:05 Intelligent generating method and application of heating furnace target billet heating curve
   Xiang Xu, Zhengjun Yu, Jian He, Xuebo Chen
   Show (Yes/No):  Comments:

08:05-08:18 Modeling and Analysis of Water Injection Cooling Molding System
   Jianhao Song, Feng Gao, Quan Huang, Zhiyue Liu, Longjie Zhang, Yong Chen
   Show (Yes/No):  Comments:
T122 - TT Signal and Image Processing and Computational Intelligence

Chairs: Xianqiang Yang, Wang Zhenwei

07:00-07:13 Three-dimensional Reconstruction of Complex Spatial Surface Based on Line Structured Light
   - Hongsheng Shi, Zhenwei Wang, Hong Chen
   Show (Yes/No): Comments:

07:13-07:26 Aurora Image Classification Robust to Noise Labels
   - Takeru Endo, Mitsuharu Matsumoto
   Show (Yes/No): Comments:

07:26-07:39 A Visual Odometry for Wide Angle Fovea Sensor SLAM
   - Tomoki Takamura, Sota Shimizu, Rei Murakami, Alessandro Carfi, Fulvio Mastrogiavanni
   Show (Yes/No): Comments:

07:39-07:52 Application of Walsh Filter in Geophysical Well-Log Data Interpretation for Automated Lithological Bed Boundary Detection
   - Gagandeep Singh, Deepan Datta, William K. Mohanty, Aurobinda Routray, Rahul Mahadik
   Show (Yes/No): Comments:

07:52-08:05 Study of brain activity for total sleep deprivation.
   - Teja Mannepalli, Nandini Rajaram, Priyadarshini Mishra, Aurobinda Routray
   Show (Yes/No): Comments:

08:05-08:18 Reduction in the ill-posedness of the EEG source localization problem
   - Teja Mannepalli, Aurobinda Routray
   Show (Yes/No): Comments:
T092 - TT Power Electronics & Energy Conversion

Chairs: Dapeng Tian, Guo Xu
07:00-07:13 Inductor Switched Series Loaded Resonant Converter For Led Applications
   Sree Vidhya Vaidyanadhan, Guru Sumanth G, Sankar Peddapati, Svk Naresh
   Show (Yes/No): Comments:

07:13-07:26 A Novel Current Limiting Control Strategy for Three-Phase Three-Wire Inverter with Transformer
   Xuecheng Liang, Li Peng
   Show (Yes/No): Comments:

07:26-07:39 Hybrid Switched Inductor Step-Up Ultra-Sparse Matrix Converter for Wind Generator Applications
   Maraka Israyelu, Sashidhar Sampathirao
   Show (Yes/No): Comments:

07:39-07:52 An Improved Extended Phase Shift Modulation for DAB Converter with the Blocking Capacitor
   Jian Tang, Guo Xu, Liting Li, Jingtao Xu, Mei Su
   Show (Yes/No): Comments:

07:52-08:05 An Efficiency Optimization Control Method With Fast Dynamic Response For Muti-Phase Interleaved Synchronous Rectifier BUCK Converter
   Peng Zhang, Yang Liu, Jin Zhao, Hanshu Zhang, Qiaoqiang Lv
   Show (Yes/No): Comments:

08:05-08:18 Modified Switched-Inductor Based DC-DC Buck-Boost Converter for Low-Power Applications
   Hamood-Ur-Rehman
   Show (Yes/No): Comments:
T102 - TT Power Systems and the Smart Grid

Chairs: Fangzhou Liu, Salvy Bourguet

07:00-07:13  A Grey Wolf Algorithm Optimized SVM Method for Voltage Sag Identification in Distribution Systems
            Mo Wenxiong
            Show (Yes/No):  Comments:

07:13-07:26  A Local Density Clustering Based Method for Disturbance Source Identification of Power quality in Distribution Systems
            Wang Yong
            Show (Yes/No):  Comments:

07:26-07:39  Location Method for Three Phase Unbalance Sources in Distribution Network Based on CSO Optimized Deep Belief Network
            Luan Le
            Show (Yes/No):  Comments:

            Xu Zhong
            Show (Yes/No):  Comments:

07:52-08:05  Energy management of microgrids: from a mixed-integer linear programming problem to a rule-based real-time algorithm
            Anthony Roy, Francois Auger, Jean-Christophe Olivier, Bruno Auvity, Emmanuel Schaeffer, Salvy Bourguet
            Show (Yes/No):  Comments:

08:05-08:18  Interface Compensation for More Accurate Power Transfer and Signal Synchronization within Power Hardware-in-the-Loop Simulation
            Zhiwang Feng, Rafael Peña-Alzola, Paschalis Seisopoulos, Mazheruddin Syed, Efren Guill Sansano, Patrick Norman, Graeme Burt
            Show (Yes/No):  Comments:
S031 - SS Advanced Electrical Machines and Drives for Transportation Electrification

Chairs: Qingsong Wang, Xing Zhao

07:00-07:13  Initial Rotor Position Estimation of Brushless Synchronous Starter/Generators Based on the Excitation System
  Shuai Mao, Xu Han, Jianqiu Li, Qian Zhang, Zunyan Hu, Liangfei Xu
  Show (Yes/No): Comments:

07:13-07:26  Passive Variable Field PM Motor Utilizing Space Harmonics
  Takumi Kumai, Masahiro Aoyama
  Show (Yes/No): Comments:

07:26-07:39  Design and Analysis of a Ferrite-PM-Assisted Hybrid Reluctance Machine for Electric Vehicle Propulsion
  Weiyu Wang, Xing Zhao, Sigao Wang, Shuangxia Niu, Qingsong Wang
  Show (Yes/No): Comments:

07:39-07:52  Analysis of Torque Performance of Motor With Continuous Flat Wire
  Jinpeng Song, Jianqiu Li, Zunyan Hu, Liangfei Xu, Jiayi Hu, Minggao Ouyang
  Show (Yes/No): Comments:

07:52-08:05  Analysis of Vernier Machine with Stator-V-Shaped Permanent-Magnet Arrangement
  Fawen Shen, Yuming Yan, Shanmukha Ramakrishna, Chandana Jayampathi Gajanayake, Shuai Wang, Christopher H. T. Lee
  Show (Yes/No): Comments:

08:05-08:18  High resolution initial rotor position estimation of SRM using peak current detection
  Samant Kumar Singh, Ashwani Kumar Rana, A. V. Ravi Teja
  Show (Yes/No): Comments:
47th Annual Conference of the IEEE Industrial Electronics Society

Room L
Thursday, 14 October 2021
07:00 - 08:20

S242 - SS DCDC Converters Circuits, Modeling, Control and Applications

Chairs: Mahajan Sagar Bhaskar, Frede Blaabjerg

07:00-07:13 Numerous Patterns of Inductor Currents in DCM of Coupled SiDO Boost Converter
Nupur Nupur, Shabari Nath
Show (Yes/No): Comments:

07:13-07:26 A 10MHz Forward-Flyback Resonant DC/DC Converter
Lei Huang, Ling Gu
Show (Yes/No): Comments:

07:26-07:39 Three-Port Magnetically Coupled Resonant Wireless Energy Router with Dual Sources and Dual Loads and Its Power Management Strategy
Chaoyang Yan, Fuxin Liu, Haojie Shen, Xuling Chen
Show (Yes/No): Comments:

07:39-07:52 Adaptive Continuous Sliding Mode Control of Buck Converters Based on Zero-Crossing Checking
Yanmin Wang, Weiqi Zhang, Zekun Zhang, Haoran Cai
Show (Yes/No): Comments:

07:52-08:05 An Isolated High Step-Up Three Switch Quasi-Z-Source DC-DC Converter
Kang Liu, Xiaoquan Zhu, Kaiwen Ye, Liming Jiang
Show (Yes/No): Comments:

08:05-08:18 A Synchronous Rectification Method of Bidirectional CLLC Resonant Converter Based on Phase and Duty Cycle Regulation
Xiaobo Liu, Xiaohua Wu, Xiangke Li, Xinyue Zhang, Fei Deng, Shixian Sun
Show (Yes/No): Comments:
S171 - SS Advances of Modular Power Electronics Converters for Transportation Applications

Chairs: Chunyang Gu, Giovanni De Carne

07:00-07:13  Comparative Study of Current Control Techniques for Fault-tolerant Five-phase PMSM
Huanran Wang, Giampaolo Buticchi, Chunyang Gu, Shun Bai, Michael Galea
Show (Yes/No): Comments:

07:13-07:26  Active Rectifier Control for Selective Fuse Tripping in a DC Microgrid
Jiajun Yang, Giampaolo Buticchi, Chunyang Gu, Pat Wheeler, Sebastian Brueske
Show (Yes/No): Comments:

07:26-07:39  An Advanced Extended Phase Shift Modulation Strategy of Dual Active Bridge Converter Considering Magnetizing Inductance
Yicong Cai, Chunyang Gu, Jiajun Yang, Jing Li, Giampaolo Buticchi, He Zhang
Show (Yes/No): Comments:

07:39-07:52  Comparison of Traction Substation Topologies for AC 25kV Electrical Railway
Milos Straka, Vojtech Blahnik, Martin Pittermann
Show (Yes/No): Comments:

07:52-08:05  A High-Frequency Pulsating DC-Link for Electric Vehicle Drives with Reduced Losses
Zhongxi Li, Aobo Yang, Gerry Chen, Zhiyong Zeng, Angel Peterchev, Stefan Goetz
Show (Yes/No): Comments:

08:05-08:18  Feed-forward decoupling control to enhance robust stability of PV inverter connected to a weak grid.
Antoine Musengimana, Zheng Xuemei, Li Haoyu
Show (Yes/No): Comments:
Room N
Thursday, 14 October 2021
07:00 - 08:20

S341 - SS Fuel Cell System Application in Transportation Electrification

Chairs: Rui Ma, Liangfei Xu

07:00-07:13  A Novel Bidirectional DC Solid State Power Controller for Fuel-Cell-Powered UAVs
Yuqing Fei, Shuai Ding, Yao Li, Xinyi Li, Zhongzheng Zhou, Bowen Zhang, Weilin Li
Show (Yes/No):  Comments:

Yigeng Huangfu, Chongyang Tian, Peng Li, Sheng Quan, Yonghui Zhang, Rui Ma
Show (Yes/No):  Comments:

07:26-07:39  Energy Management Strategy of Distributed Electric Propulsion Aircraft Hybrid Power System based on State Machine
Rui Ma, Minghao Yuan, Yang Zhou, Yufan Zhang, Fuwang Yang
Show (Yes/No):  Comments:

07:39-07:52  A Design of Air System Control Algorithm for Full Power Fuel Cell Vehicles
Hui Tao, Jianhui Zhang, Liangfei Xu, Zunyan Hu, Jianqiu Li, Minggao Ouyang
Show (Yes/No):  Comments:

07:52-08:05  Research on Multi-Objective Optimized Energy Management Strategy for Fuel Cell Hybrid Vehicle Based on Work Condition Recognition
Yigeng Huangfu, Zelong Zhang, Liangcai Xu, Wenzhuo Shi, Shengrong Zhuo
Show (Yes/No):  Comments:

08:05-08:18  Lookup Table-based Electro-Thermal Real-Time Simulation of Output Series Interleaved Boost Converter for Fuel Cell Applications
Qian Li, Hao Bai, Elena Breaz, Robin Roche, Fei Gao
Show (Yes/No):  Comments:
S132 - SS Advances in Human-Mechatronic Systems

Chairs: Sho Yokota, Mihoko Niitsuma

07:00-07:13  Autonomous Mobile Robot Navigation by Reinforcement Learning Considering Pedestrian Movement Tendencies  
  Kanako Amano, Haruka Isshiki, Yuka Kato  
  Show (Yes/No):  Comments:

07:13-07:26  Effective Voltage Control of Liquid Crystal Lens for Rapid Focal Length Change  
  Tsugumi Fukui, Sota Shimizu, Keigo Muryobayashi, Marenori Kawamura, Susumu Sato, Nobuyuki Hasebe  
  Show (Yes/No):  Comments:

07:26-07:39  A Portable Interactive Projection Device to Provide Visual Support for Children with Special Needs  
  Bruno Leme, Mika Oki, Kenji Suzuki  
  Show (Yes/No):  Comments:

  Masahiro Kamigaki, Seiichiro Katsura  
  Show (Yes/No):  Comments:

07:52-08:05  Control Barrier Function Based Assist Control with Shifting Sensor and Footprint Positions  
  Shunsuke Kimura, Naito Kakuya  
  Show (Yes/No):  Comments:

08:05-08:18  Study on forestry control system to improve forestry workers safety  
  Yuki Ayuta, Kouhei Okuda, Eisuke Kawamoto, Satoshi Muramatsu, Katsuhiko Inagaki, Daisuke Chugo, Syo Yokota, Hiroshi Hashimoto  
  Show (Yes/No):  Comments:
Room P
Thursday, 14 October 2021
07:00 - 08:20

S551 - SS NetworkBased Cooperative Intelligence of Heterogeneous Microgrid Clusters

Chairs: Jingang Lai, Xiaoqing Lu
07:00-07:13 VSG Control Strategy Based on Model Predictive for Islanded Microgrid Inverter
   Xuemei Zheng, Xu Shi, Haoyu Li, Yong Feng
   Show (Yes/No): Comments:

07:13-07:26 Full-order Terminal Sliding mode Control for Virtual Synchronous Generator based Inverter
   Minghao Zhou, Xingguo Wu, Hongyu Su, Wei Xu, Long Xu, YIng Chi
   Show (Yes/No): Comments:

07:26-07:39 Cascaded 3-Phase-Bridge Converter Based on Virtual Synchronous Generator Control
   Yang Yu, William Cai, Hanying Gao, Qingbo Guo, Minghao Zhou, Shiqiang Hou
   Show (Yes/No): Comments:

07:39-07:52 A novel swarm intelligence optimization based predictive control of PV systems for complex conditions
   Yingxue Chen, Linfeng Gou, Chujia Sun
   Show (Yes/No): Comments:

07:52-08:05 Distributed Economical Dispatch Control for an AC Microgrid-Like Electric Vehicle Park
   Chang Yu
   Show (Yes/No): Comments:

08:05-08:18 A Robust Deadzone Compensation Method Against Parameter Variations based on Kalman Filter and Neural Networks
   Le Pei, Liyi Li, Jiaxi Liu, Zhenxing Cheng, Qingbo Guo, Hongchen Liu
   Show (Yes/No): Comments:
S211 - SS Computational intelligence for power system networks and smart grid

Chairs: Vasundhara Mahajan, Narayana Prasad Padhy

07:00-07:13 Rule extraction from electricity load profile data for smart metering analytics
   Geordie Dalzell, Xinghuo Yu, Peter Sokolowski
   Show (Yes/No): Comments:

07:13-07:26 A New Novel Approach for Optimal Capacitor Placement in Radial Distribution Networks using Data Envelopment Analysis
   Shubham Gupta, Vinod Kumar Yadav, Madhusudan Singh
   Show (Yes/No): Comments:

07:26-07:39 Oscillation Mode Assessment in Power System Using Multivariate Variational Mode Decomposition
   Rahul S, Sunitha R, Akhil V M
   Show (Yes/No): Comments:

07:39-07:52 A PMP Energy Management Strategy based on State Switching for a Fuel Cell UAV
   Rui Ma, Jian Song, Hongyu Zhang, Bowen Zhang, Yuang Wang, Bo Liang
   Show (Yes/No): Comments:

07:52-08:05 An Energy Management Strategy of More-Electric Aircraft Based on Fuzzy Neural Network Trained by Dynamic Programming
   Yigeng Huangfu, Wenzhuo Shi, Liangcai Xu, Zelong Zhang, Zijun Ren, Shengrong Zhuo
   Show (Yes/No): Comments:

08:05-08:18 Energy Management Strategy for All-electric Propulsion UAV based on Fuel Cell Power System
   Malo Cresson, Rui Ma, Liangcai Xu
   Show (Yes/No): Comments:
S141 - SS Advances in Protection System DC and AC Power Network

Chairs: Satarupa Bal, Xiaoqing Song

07:00-07:13  Smart Energy Management for Prosumers in Local Energy Communities
    Weng Kean Yew, David Flynn
    Show (Yes/No):  Comments:

    Show (Yes/No):  Comments:

07:26-07:39  Fault Location on Three-Terminal Transmission Lines Based on a Meta-Heuristic Algorithm
    Duy Chau Huynh, Thanh Huu Truong, Matthew Walter Dunnigan
    Show (Yes/No):  Comments:

07:39-07:52  Evaluation of 6-terminal 36-slot Induction motor Drive with 1:2 Speed Ratio using PPM
    Sheetal Umredkar, Ritesh Kumar Keshri, Vijay B Borghate, Mohan M Renge
    Show (Yes/No):  Comments:
IECON2021 Keynote 3: Babak Fahimi

Towards a Reliable, Sustainable, and Eco-friendly Electric Propulsion System
Dr. Babak Fahimi
University of Texas at Dallas, Distinguished Chair of Engineering
Chairs: Kamal Al-Haddad, Xinghuo Yu
IECON 2021 Keynote 4: Ivano Labricciosa

The Industrial Digital Nexus – Our Greatest Engineering Opportunity
Ivano Labricciosa
President & CEO Oshawa Power And Utilities Corporation
Chairs: Kamal Al-Haddad, Xinghuo Yu
47th Annual Conference of the IEEE Industrial Electronics Society

Room A
Thursday, 14 October 2021
10:00 - 11:20

T047 - TT Electrical Machines and Drives

Chairs: Giampaolo Buticchi, Giovanni Migliazza
10:00-10:13 Studying the Algorithm of Optimal Correction of Control Structure Parameters for Generator Excitation Control
  Fedor Mitin
  Show (Yes/No): Comments:

10:13-10:26 Deterministic winding function model for slotted induction machines validated by air gap magnetic field measurements
  Matthias Stiller, Ingo Hahn
  Show (Yes/No): Comments:

10:26-10:39 Two-level Topology Optimization based on a Metaheuristic Method and Morphological Reconstruction
  Shabnam Ruzbehi, Ingo Hahn
  Show (Yes/No): Comments:

10:39-10:52 Topology Optimization of Electrical Machines for NVH Purposes in E-mobility Applications - Part 1
  Johan Cederlund, Shafigh Nategh, David Lennström
  Show (Yes/No): Comments:

10:52-11:05 Modelling the Influence of the Mechanical Forces on the Commutation Process of a DC Motor
  Johannes Wagner, Ingo Hahn
  Show (Yes/No): Comments:

11:05-11:18 Online Incremental Inductance Identification for Reluctance Synchronous Motors
  Matteo Berto, Luigi Alberti, Floran Martin, Marko Hinkkanen
  Show (Yes/No): Comments:
47th Annual Conference of the IEEE Industrial Electronics Society

Room B
Thursday, 14 October 2021
10:00 - 11:20

T0411 - TT Electrical Machines and Drives

Chairs: Atif Iqbal, Alessandro Serpi

10:00-10:13 Influence of the Magnetic Load on High Speed Synchronous Reluctance Machines Design
   Gianvito Gallicchio, Mauro Di Nardo, Marco Palmieri, Michele Degano, Chris Gerada, Francesco Cupertino
   Show (Yes/No): Comments:

10:13-10:26 Performance Improvement of Fault-Tolerant Control for Dual Three-Phase PMSM Drives Under Inter-Turn Short Circuit Faults
   Hüseyin Tayyer Canseven, Abdurrahman Ünsal
   Show (Yes/No): Comments:

10:26-10:39 Combined Electrical-Thermal Gray-Box Model and Parameter Identification of an Induction Motor
   Marius Stender, Oliver Wallscheid, Joachim Böcker
   Show (Yes/No): Comments:

10:39-10:52 Magnetic Equivalent Circuit Modeling of a Single-phase Brushless Exciter for Aircraft Starter/Generator
   Lihong Xie, Xibo Yuan, Giovanni Raimondi, Mark Worthington
   Show (Yes/No): Comments:

10:52-11:05 A Comparison of Sensorless MTPA and Quasi-MPF Control for VSD-PMaSynRM
   Alper Tap, Kadir Akgul, Ali Fuat Ergenc, Murat Yilmaz, Lale T. Ergene
   Show (Yes/No): Comments:

11:05-11:18 Impact of Airgap on the Performance of 3-Phase Permanent Magnet Hybrid Stepper Motor
   Murat Onsal, Yucel Demir, Metin Aydin, Mustafa Kamil Guven
   Show (Yes/No): Comments:
S&YP-WiE - Round table

Mentors - Industry Link Round Table title: “Energy, Information and Industrial revolution”
Invited Keynote Panelists: Seta Bogosyan, Lucia Lo-Bello, Morgan Kiani, Jose Rodriguez, Regina Roos, Reinaldo Tonkoski, starting with short presentations of panelists 10 minutes each then discussion.
Chairs: Andrii Chub, Hong Li, Marek Jasinski

Closing remarks by IEEE IES Vice President for Membership
Prof. Yousef Ibrahim, Federation University Australia, IEEE IES VP Membership.
IF2 - Industrial Automotive Applications

Talk 1: The Future of Mobility in India (10:00 – 10:25 am)
Dr. Tapan Sahoo, Executive Director (Maruti Suzuki India Ltd, India)

Mr. Yupeng Wang, Chief Engineer (China First Auto Works (FAW), China)

Talk 3: 5G and MEC: Impact and Challenges in Mobility (10:50 – 11:15 am)
Mr. Naoki Shimizu, General Manager, Technology Development (Mitsubishi Electric Automotive America, Silicon Valley Office, USA)

Chairs: Dr. Victor Huang,
47th Annual Conference of the IEEE Industrial Electronics Society

Room E

Thursday, 14 October 2021
10:00 - 11:20

T027 - TT Control System, Robotics and Automation

Chairs: Hao Luo, Zhiwen Chen

10:00-10:13 A DMP-based online adaptive stiffness adjustment method
    Jiale Dong, Weiyong Si, Chenguang Yang
    Show (Yes/No): Comments:

10:13-10:26 On Improving TLS Identification Results Using Nuisance Variables with Application on PMSM
    Dominik Friml, Michal Kozubik, Pavel Vaclavek
    Show (Yes/No): Comments:

10:26-10:39 Trajectory sequence generation and static obstacle avoidance for automatic positioning tasks with a tower crane
    Matthias Thomas, Jiacheng Qiu, Oliver Sawodny
    Show (Yes/No): Comments:

    Carl Borngrund, Tom Hammarkvist, Ulf Bodin, Fredrik Sandin
    Show (Yes/No): Comments:

10:52-11:05 Virtual Leader based Trajectory Generation of UAV Formation for Visual Area Coverage
    Hilton Tnunay, Kaouther Moussa, Ahmad Hably, Nicolas Marchand
    Show (Yes/No): Comments:

11:05-11:18 Trajectory Planning for Concrete Element Fabrication with Optimal Control
    Boris Blagojevic, Benjamin Schönenmann, David Nigl, Lucio Blandini, Oliver Sawodny
    Show (Yes/No): Comments:
47th Annual Conference of the IEEE Industrial Electronics Society

Room F

Thursday, 14 October 2021
10:00 - 11:20

T031 - TT Electric Energy Storage Systems

Chairs: Varsha A. Shah, Sachin Jain
10:00-10:13  SOC, Temperature and Dual-Objective Balancing in Reconfigurable Batteries for Electric Vehicles
   Jan Kleiner, Lorenz Lechermann, Lidiya Komsyyska, Christian Endisch, Michael Hinterberger
   Show (Yes/No): Comments:

   Abdulkarim A Ahmouda, Daniel T Gladwin
   Show (Yes/No): Comments:

10:26-10:39  Data-selection for state estimation of large-scale battery systems
   Zhuo Wang, Daniel T. Gladwin, Matthew J. Smith, Thomas L. Fantham
   Show (Yes/No): Comments:

10:39-10:52  Multidimensional Machine Learning Balancing in Smart Battery Packs
   Roberta Di Fonso, Xin Sui, Anirudh B. Acharya, Remus Teodorescu, Carlo Cecati
   Show (Yes/No): Comments:

10:52-11:05  A Review of Lithium-ion Batteries Diagnostics and Prognostics Challenges
   Seyedreza Azizighalehsari, Jelena Popovic, Prasanth Venugopal, Braham Ferreira
   Show (Yes/No): Comments:

11:05-11:18  Hybrid Battery-SC and Battery-Battery Multistage Design and Energy Management for Power Sharing
   Khadim Ullah Jan, Anne Migan Dubois, Demba Diallo
   Show (Yes/No): Comments:
47th Annual Conference of the IEEE Industrial Electronics Society

Room G
Thursday, 14 October 2021
10:00 - 11:20

T064 - TT Industrial Automation, Communication, Networking and Informatics

Chairs: Reinder J. Bril, Teemu Mätäsnäemi
10:00-10:13 A Method to Automatically Generate Semantic Skill Models from PLC Code
   Aljosha Köcher, Tom Jeleniewski, Alexander Fay
   Show (Yes/No): Comments:

10:13-10:26 A Digital Twin for Analysis of Radiation Heating in Thermoforming Processes
   Enrico Spateri, Fredy Ruiz, Giambattista Gruosso
   Show (Yes/No): Comments:

10:26-10:39 Benchmarking The Operation Times Of Nosql And Mysql Databases For Python Clients
   Mike Reichardt, Michael Gundall, Hans Dieter Schotten
   Show (Yes/No): Comments:

10:39-10:52 Robust detection of persons in emergency situations in public buildings
   Jan Haase
   Show (Yes/No): Comments:

10:52-11:05 A Control Injection Attack against S7 PLCs - Manipulating the Decompiled Code
   Wael Alsabbagh, Peter Langendörfer
   Show (Yes/No): Comments:

11:05-11:18 Speed Limits for Single-Beam Laser Marking
   David Castells-Rufas, Francesc Bravo-Montero, Jordi Carrabina
   Show (Yes/No): Comments:
S071 - SS Advanced Technology for Electric Vehicle Charging Systems and its Management

Chairs: C. Bharatiraja, Sheldon Williamson

10:00-10:13 Technological Overview of Onboard Chargers for Electrified Automotive Transportation
   Harish Karneddi, Deepak Ronanki, Ricardo Lizana Fuentes
   Show (Yes/No): Comments:

10:13-10:26 Power Management of a Smart Vehicle-to-Grid (V2G) System Using Fuzzy Logic Approach
   Majid Mehrasa, Reza Razi, Khaled Hajar, Antoine Labonne, Ahmad Hably, Seddik Bacha
   Show (Yes/No): Comments:

10:26-10:39 Limiting discharge cycles numbers for plug-in electric vehicles in bidirectional smart charging algorithm
   Reza Razi, Khaled Hajar, Majid Mehrasa, Antoine Labbone, Ahmad Hably, Seddik Bacha
   Show (Yes/No): Comments:

10:39-10:52 A Survey on Charging Station Architectures for Electric Transportation
   Raghda Hariri, Fadia Sebaaly, Charles Ibrahim, Sheldon Williamson, Hadi Y. Kanaan
   Show (Yes/No): Comments:

10:52-11:05 Multibattery charger system based on a three-level dual-active-bridge power converter
   Jose M. Campos-Salazar, Sergio Busquets-Monge, Alber Filba-Martinez, Salvador Alepuz
   Show (Yes/No): Comments:

11:05-11:18 Optimal Sizing of Electric Vehicle Charging Stations in Residential Parking
   Abdelhak Borhani, Hamid Ouadi, Mohamed Najouli
   Show (Yes/No): Comments:
T096 - TT Power Electronics & Energy Conversion

Chairs: Josep Pou, Gonzalo Abad

10:00-10:13  A Modified SHMPWM Algorithm based on the 3L-NPC Inverter Connected with the 10kV Grid
    Tao Jing, Alexander Maklakov, Andrey Radionov, Vadim Gasiyarovv
    Show (Yes/No): Comments:

10:13-10:26  Neural Network Modeling of Nonlinear Filters for EMC Simulation in Discrete Time Domain
    Jan-Philipp Roche, Jens Friebe, Oliver Niggemann
    Show (Yes/No): Comments:

10:26-10:39  An Isolated Variable-Resistance Active Gate Driver for Use in SiC-Driven Inverters
    Julius Wiesemann, Axel Mertens
    Show (Yes/No): Comments:

10:39-10:52  Development of a SPICE modelling strategy for power devices in GaN technology
    Enrico Bottaro, Mario Cacciato, Alessandra Raffa, Santi Agatino Rizzo, Nunzio Salerno, Pier Paolo Veneziano
    Show (Yes/No): Comments:

10:52-11:05  Benefits of Finer Semiconductor Device Granularity on Power Converter Thermal Stress and MTTF
    Roya Rafiezadeh, Sergio Busquets-Monge, Salvador Alepuz
    Show (Yes/No): Comments:

11:05-11:18  Impact of Temperature and Switching Rate on Properties of Crosstalk on Symmetrical & Asymmetrical Double-trench SiC Power MOSFET
    Juefei Yang, Saeed Jahdi, Bernard Stark, Ruizhu Wu, Olayiwola Alatise, Jose Ortiz Gonzalez
    Show (Yes/No): Comments:
47th Annual Conference of the IEEE Industrial Electronics Society

Room J

Thursday, 14 October 2021
10:00 - 11:20

**T104 - TT Power Systems and the Smart Grid**

Chairs: Enrique Romero-Cadaval, Mo-Yuen Chow

10:00-10:13  Elasticity &amp; Dynamic Assessment of Objectives Weights with Multiple Demand Response Programs  
*Charles Ibrahim, Imad Mougharbel, Hadi Y. Kanaan*

Show (Yes/No): Comments:

10:13-10:26  A Hardware-in-the-Loop Co-simulation of Multi-modal Energy System for Control Validation  
*Diran Liu, Dominik Hering, Daniele Carta, Andre Xhonneux, Dirk Müller, Andrea Benigni*

Show (Yes/No): Comments:

10:26-10:39  Research needs for harmonic stability analysis of power electronic devices in low voltage networks  
*Elias Kaufhold, Jan Meyer, Peter Schegner*

Show (Yes/No): Comments:

10:39-10:52  A Novel Multilevel Interleaved-Based PFC Rectifier with Modular DC Interfaces  
*Vitor Monteiro, Joao Afonso*

Show (Yes/No): Comments:

10:52-11:05  Interfacing Power Electronics Systems for Smart Grids: Innovative Perspectives of Unified Systems and Operation Modes  
*Vitor Monteiro, Tiago Soares, Joao P. Lopes, Manuel Matos, Joao Afonso*

Show (Yes/No): Comments:

11:05-11:18  Continuous Control Set Model Predictive Control of a Bridgeless-Boost Three-Level Active Rectifier  
*Vitor Monteiro, Jose Afonso, Ana Rodrigues, Tiago Sousa, Joao Afonso*

Show (Yes/No): Comments:
47th Annual Conference of the IEEE Industrial Electronics Society

**Room K**

Thursday, 14 October 2021
10:00 - 11:20

**S501 - SS Modern Power Converters and Control for Renewable Energy Systems and SmartMicro Grids**

Chairs: Pandav Kiran Maroti, Sanjeevikumar Padmanaban

10:00-10:13 **A High-Step up and Low-Spikes Inverter based on Two T-type Coupled Inductors**

Qing Cheng, Wei Wang, Yueshi Guan, Tingting Yao, Dianguo Xu

Show (Yes/No): Comments:

10:13-10:26 **A Comparison of Fixed-Parameter Active-Power-Oscillation Damping Solutions for Virtual Synchronous Generators**

Yun Yu, Gibran David Agundis Tinajero, Sanjay K Chaudhary, Luona Xu, Nur Najihah Binti Abu Bakar, Josep M. Guerrero, Juan C. Vasquez

Show (Yes/No): Comments:

10:26-10:39 **Islanding Classification With Optimized k-Nearest Neighbors for Three-Phase Grid Connected Photovoltaic System**

Faizah Fayaz, Ahteshamul Haque, K. V. Satya Bharath, Sanjeevikumar Padmanaban

Show (Yes/No): Comments:

10:39-10:52 **DC microgrid voltage stability by Model Free Super-Twisting Sliding Mode Control**

Sarah Kassir, Moustapha Doumiati, Mohamed Machmoum, Clovis Francis, Maher El Rafei

Show (Yes/No): Comments:

10:52-11:05 **A Lumped, Resonant Switched Capacitor Converter**

Nakul Narayanan K., Andrew Cross, Hassan Taghzideh, L. Umanand

Show (Yes/No): Comments:

11:05-11:18 **Doubly Fed Induction Generator with Multi-Vector Model Predictive Power Control**

Mohammad Ebrahim Zarei, Milan Prodanovic, Dionisio Ramirez

Show (Yes/No): Comments:
S411 - SS Improving Battery Management Systems through Signal Processing, Machine Learning, Data Fusion, and Control Algorithms

Chairs: Balakumar BALASINGAM, Krishna R. PATTIPATI

10:00-10:13 Lithium-ion Battery State of Health Estimation based on Cycle Synchronization using Dynamic Time Warping
  Kate Qi Zhou, Yan Qin, Billy Pik Lik Lau, Chau Yuen, Stefan Adams
  Show (Yes/No): 
  Comments:

10:13-10:26 Battery Thermal Model Identification And Surface Temperature Prediction
  Pradeep Kumar, Balakumar Balasingam, Gary Rankin, Krishna R. Pattipati
  Show (Yes/No): 
  Comments:

10:26-10:39 Comparative Study and Development of Optimized Energy Efficient Battery Thermal Management System for Electric Vehicles in India
  Pradeep Kumar, Yasser Rafat, Peeyush Varshney, Deepak Chaudhary, Mohammad Saad Alam, Balakumar Balasingam
  Show (Yes/No): 
  Comments:

10:39-10:52 Underwater Environmental Impact and Thermal Management of Unmanned Underwater Vehicle Li-Ion Batteries
  Tomas Salazar, Sean Youngblood, Sung-Yeul Park
  Show (Yes/No): 
  Comments:

10:52-11:05 Model Predictive Control of HVAC System in a Battery Electric Vehicle with Fan Power Adaptation for Improved Efficiency and Online Estimation of Ambient Temperature
  Maryam Alizadeh, Sumedh Dhale, Ali Emadi
  Show (Yes/No): 
  Comments:

11:05-11:18 Battery Cell Dynamic Modeling Using the RC Equivalent Circuit for RTDS Frameworks
  Morteza Rezaei Larijani, MohammadReza Zolghadri, Shahin Hedayati Kia, Ahmed El Hajjaji
  Show (Yes/No): 
  Comments:
S451 - SS Low Power Smart Sensors for Industrial Applications Hardware and Software Design

Chairs: Reza Abrishambaf, António Espírito-Santo
10:00-10:13  ESD wrist strap-based EDA sensor cum ESD strap integrity monitor
   Ashish Joglekar, Gaurav Bhandari, Rajesh Sundaresan
   Show (Yes/No): Comments:

10:13-10:26  Vehicle Route Prediction System in the context of Motion Sickness Mitigation
   Tiago Aston, Rui Gomes, Paulo Cardoso
   Show (Yes/No): Comments:

10:26-10:39  On the Power Consumption of a Bluetooth Device Operating in Beacon Mode
   Luigi Ferrigno, Fillipo Milano, Antonio Espirito Santo, Jose Salvado, Marco Laracca, Vincenzo Paciello
   Show (Yes/No): Comments:

10:39-11:05  IEC 61499 and IEEE 1451 for Distributed Control and Measurement Systems
   Reza Abrishambaf, Helbert da Rocha, Antonio Espirito-Santo
   Show (Yes/No): Comments:

11:05-11:18  Security Certification of Cyber Physical Systems for Critical Infrastructure based on the Compositional MILS Architecture
   Andreas Hohenegger, Gerald Krummeck, Janie Baños, Alvaro Ortega, Michal Hager, Jiri Sterba, Tomas Kertis, Petr Novobilsky, Jan Prochazka, Benito Caracuel
   Show (Yes/No): Comments:
47th Annual Conference of the IEEE Industrial Electronics Society

Room N

Thursday, 14 October 2021
10:00 - 11:20

S471 - SS Modeling, Control and Design of Propulsion Drive for EVs

Chairs: Kundan Kumar, Rakesh Kumar

10:00-10:13 Techno Economic Aspects of The Wireless Electric Vehicle Charging
K Vidhya, C. Sharmeeela, S. Balaji, S. Elango, P. Sanjeevikumar, M. S. Bhaskar

Show (Yes/No): Comments:

10:13-10:26 Data Driven Fault Classification Technique for Grid Connected PV Inverter
Azra Malik, Ahteshamul Haque, K. V. Satya Bharath, Sanjeevikumar Padmanaban

Show (Yes/No): Comments:

Kundan Kumar, Kantipudi V.V.S.R. Chowdary, Sanjeevikumar Padmanaban, Ramjee Prasad

Show (Yes/No): Comments:

10:39-10:52 Reduced Switch Count Three-Phase Five-Level Boosted ANPC Inverter with Unipolar PWM Scheme for Electric Vehicle Propulsion Drive
Swapan Kumar Baksi, Utkal Ranjan Muduli, Ranjan Kumar Behera, Khalifa Al Hosani, Khaled Al Jaafari, David Wenzhong Gao

Show (Yes/No): Comments:

10:52-11:05 Average-Value Modeling of Multi-Phase Machine-Converter Systems with Asymmetric Internal Faults
Seyyedmilad Ebrahimi, Navid Amiri, Juri Jatskevich

Show (Yes/No): Comments:

11:05-11:18 Design Criteria for EV Drivetrain
Tamanwè Payarou, Sumeet Singh, Mohanraj Muthusamy, Pragasen Pillay

Show (Yes/No): Comments:
S331 - SS Energy and Health Management of DC Microgrids

Chairs: Zhixue Zheng, Zhongliang Li

10:00-10:13  A comparative study for optimal sizing of a grid-connected hybrid system using Genetic Algorithm, Particle Swarm Optimization, and HOMER.  
  Hoda Elaouni, Hussein Obeid, Stéphane Le Masson, Olivier Foucault, Hamid Gualous
  Show (Yes/No):  

10:13-10:26  Three-Layer Hierarchical Model Predictive Control Concept for Industrial DC Microgrids  
  Elias Knoechelmann, Alexander Maennel, Moritz Schappler
  Show (Yes/No):  

10:26-10:39  Development of An Energy Management Strategy for Port Cranes  
  Rofhiwa Takalani, Lesedi Masisi
  Show (Yes/No):  

  Liang Guo, Zhongliang Li, Rachid Outbib
  Show (Yes/No):  

10:52-11:05  Design Guidelines for Energy Efficient AC to DC Power Supplies  
  Michael Chrysostomou, Nicholas Christofides, Stelios Ioannou, Christos Marouchos
  Show (Yes/No):  

11:05-11:18  Towards Sustainable Models of Computation for Artificial Intelligence in Cyber-Physical Systems  
  Massimiliano Pirani, Aldo Franco Dragoni, Sauro Longhi
  Show (Yes/No):  

Comments:
T0414 - TT Electrical Machines and Drives

Chairs: Jose Antonino-Daviu, Shafigh Nategh

11:30-11:43  Modeling and Design of a Tubular Linear Generator for Direct-Drive Free-Piston Engine

Christophe S. Cyusa, Tamanwè Payarou, Dwaipayan Barman, Tamas Bertenyi, Philip Raphals, Chunyan Lai, Pragasen Pillay

Show (Yes/No):  Comments:

11:43-11:56  Performance of Mutually Coupled Switched Reluctance Machines in Generating Mode with Sinusoidal Current Excitation

Peter Azer, Aniket Anand, Ali Emadi

Show (Yes/No):  Comments:

11:56-12:09  Automatic Flux Linkage and Inductance Measurement for a Variable Flux Machine at Different Magnetization States

Bigyan Basnet, Pragasen Pillay

Show (Yes/No):  Comments:

12:09-12:22  In-Situ Magnetization of a Cold Sprayed Permanent Magnet Rotor Using an Impulse Magnetizer

Mathews Boby, Sumeet Singh, Jean-Michel Lamarre, Maged Ibrahim, Fabrice Bernier, Pragasen Pillay

Show (Yes/No):  Comments:

12:22-12:35  Dead Time Analysis of a Power-Hardware-in-the-Loop Emulator for Induction Machines

Seyedeh Nazanin Afrasiabi, Chunyan Lai, Pragasen Pillay

Show (Yes/No):  Comments:

12:35-12:48  On The Design and Performance Improvement of Single-Phase Induction Motors for Residential, Commercial and Industrial Applications

Olusegun Solomon

Show (Yes/No):  Comments:
Room B
Thursday, 14 October 2021
11:30 - 12:50

T0212 - TT Control System, Robotics and Automation

Chairs: Wanxin Jin, Ya-Jun Pan

11:30-11:43 Adaptive and Neural Network-based Control Methods Comparison using different Human Torque Synthesis for Upper-limb Robotic Exoskeleton
  Georgeta Bauer, Ya-Jun Pan
  Show (Yes/No): Comments:

11:43-11:56 A novel approach to extract the angular position estimation error for position and speed estimation of Interior Permanent Magnet Synchronous Machine
  Carlos Enrique Alvaro Mendoza, Jesús De León Morales, Mohamed Assaad HAMIDA, Malek Ghanes
  Show (Yes/No): Comments:

11:56-12:09 Distributed Formation Tracking Control with Edge-Triggered Communication Mechanism
  Zipeng Huang, Robert Bauer, Ya-Jun Pan
  Show (Yes/No): Comments:

12:09-12:22 Development of Agricultural Robot Platform with Virtual Laboratory Capabilities
  German Monsalve, Oriane Thiery, Simon De Moreau, Alben Cardenas
  Show (Yes/No): Comments:

12:22-12:35 Task Space Bilateral Teleoperation of Co-manipulators using Power-based TDPC and Leader-follower Admittance Control
  Chen Cai, Ya-Jun Pan, Steven Liu, Lucas Wan
  Show (Yes/No): Comments:

12:35-12:48 Terminal Sliding Mode Control for the Formation of a Team of Quadrotors and Mobile Robots
  Ryan Adderson, Ya-Jun Pan
  Show (Yes/No): Comments:
WiE - Women in IES Session

15.30 - 15.40 UTC  Welcome and Introduction to the Women in IES initiative
Prof. Lucia Lo Bello, University of Catania, Italy, IES representative for Women in Engineering
Prof. Yousef Ibrahim, Federation University Australia, IES VP for Membership

15.40-16.00 UTC: Invited Speech
Prof. Seta Bogosyan, Turkey/USA
Title: "Connected and Autonomous Transportation: Challenges and Need for International Networks"
Chair: Lucia Lo Bello

16.00-16.20 UTC: Invited Speech
Dr. Regina Roos, Typhoon-HIL GmbH, Switzerland
Title: "Diversity or Division of Work"
Chair: Morgan Kiani

16.20-16.40 UTC Invited Speech
Prof. Maria Ines Valla, Argentina
Title: "Women in Engineering within the National Research Council in Argentina"
Chair: Regina Roos

16.40-16.50 UTC: Wrap-up and Closing
Chairs: Lucia Lo Bello,
INTEROP2 - TEAM (Automotive)

Cloud Computing Simulation platform for e-mobility, Siemens
Real-Time Sim & HIL for grids & EVs, Typhoon HIL
Energy Management & EVs, NC State University (MY Chow)
AUTO 4 (TBD), TBD
OPEN DISCUSSIONS
Chairs: Fei Gao, Akshay Rathore
47th Annual Conference of the IEEE Industrial Electronics Society

Room E

Thursday, 14 October 2021
11:30 - 12:50

TUT01 - Future power conversion techniques for utility scale grid integration of renewables

Presenters
Dr. Kaushik Basu
Associate Professor
Indian Institute of Science, Bangalore

Dr. Anirban Pal
Post-Doctoral Fellow
University of Nottingham, UK
47th Annual Conference of the IEEE Industrial Electronics Society

Room F

Thursday, 14 October 2021
11:30 - 12:50

TUT02 - Fault-Tolerant and Cyber-Resilient Control of Renewable Microgrids

Presenters
Youmin Zhang
Professor
Concordia University, Montreal, Canada

Hamed Badihi
Associate Professor
Nanjing University of Aeronautics and Astronautics
Nanjing, Jiangsu, China

Saeedreza Jadidi
PhD Candidate
Concordia University, Montreal, Canada
47th Annual Conference of the IEEE Industrial Electronics Society

Room G

Thursday, 14 October 2021
11:30 - 12:50

TUT03 - Reliable and Stable Operation of DFIG Wind Power Converter

Presenters
Dao Zhou, Associate Professor, Aalborg University, Denmark
Chao Wu, Postdoc, Aalborg University, Denmark
Heng Nian, Professor, Zhejiang University, China
Yipeng Song, Control Engineer, Siemens Gamesa Renewable Energy, Denmark
TUT04 - Power Hardware-in-the-loop Machine Emulators – A game-changer in industrial systems development and testing

Presenters
Dr. R. Sudharshan Kaarthik,
Associate Professor, Indian Institute of Space Science and Technology, Thiruvananthapuram, India.

Dr. K. S. Amitkumat
Team-Lead, Power Testbed Applications,
OPAL-RT Technologies,
Montreal, Canada

Dr. Uday Deshpande,
CTO, D&V Electronics, USA
Room I
Thursday, 14 October 2021
11:30 - 12:50

T0910 - TT Power Electronics & Energy Conversion

Chairs: Deepak Ronanki, Arvind Kadam
11:30-11:43 Linear Active Disturbance Rejection Control Design for Single-Phase UPS Inverters
    Reza Rezaii, Reza Khalili, Issa Batarseh, Chinwendu Enyioha
    Show (Yes/No): Comments:

11:43-11:56 A Data-Driven Based Online Learning Control of Voltage Source Converter for DC Microgrids
    Ahmed Soliman, Mahmoud Amin, Fayez El-Sousy, Osama Mohammad
    Show (Yes/No): Comments:

11:56-12:09 Modeling and Minimization of Switching Loss in Dual Active Bridge Converters
    Negar Noroozi, Amirreza Poorfakhraei, Mehdi Narimani, Ali Emadi
    Show (Yes/No): Comments:

12:09-12:22 Dimming DC-DC LED Drivers: Luminous Efficiency, Power Losses, & Best-in-Class
    Vasu Gupta, Gabriel A. Rincon-Mora
    Show (Yes/No): Comments:

12:22-12:35 Enhancing Multistep Finite Control Set Performance of 3L-NPC Converters using Optimal Pulse Patterns
    Cristóbal González, Alejandro Angulo, Fernando Mancilla-David
    Show (Yes/No): Comments:

12:35-12:48 General Approach to Synthesize Multi-Port Power Converters for Hybrid Energy Systems
    Sina Vahid, Ayman EL-Refaie
    Show (Yes/No): Comments:
47th Annual Conference of the IEEE Industrial Electronics Society

Room J
Thursday, 14 October 2021
11:30 - 12:50

T106 - TT Power Systems and the Smart Grid

Chairs: Ambrish Chandra, Rawad Zgheib

11:30-11:43  An energy management system for power exchange between multiple residential neighborhood microgrids
    *Pedro J. Arciniega, Diego Arcos-Aviles, Mauricio Rodriguez, Wilmar Martinez*
    Show (Yes/No): Comments:

11:43-11:56  A hybrid generation system modeling for residential use in isolated areas of Ecuador
    *Jonathan Acosta, Mauricio Rodriguez, Carlos Alvarez, Diego Arcos-Aviles, Michelle Herrera, Paul Ayala, Jacqueline Llanos, Wilmar Martinez*
    Show (Yes/No): Comments:

11:56-12:09  A Computational Model for Aging Dependability in Polymeric Cable Insulation
    *Qasim Khan, Shady S. Refaat, Haitham Abu-Rub, Hamid A Toliyat*
    Show (Yes/No): Comments:

12:09-12:22  RISP: Tunable Fault-Tolerance for Distributed Iterative Numerical Solvers for the Smart Grid
    *Carlos J. Vélez-Rivera, Emmanuel Arzuaga-Cruz, Fabio Andrade, Agustín A. Irizarry-Rivera*
    Show (Yes/No): Comments:

12:22-12:35  Online Estimation of Electromechanical Oscillations from Phasor Measurements
    *Mohammad Jahvani, Martin Guay*
    Show (Yes/No): Comments:

12:35-12:48  Distributed Economic Dispatch over Strongly Connected Communication Networks
    *Mohammad Jahvani, Martin Guay*
    Show (Yes/No): Comments:

Chairs: Pandav Kiran Maroti, Rakesh Kumar

11:30-11:43 Capacitor Voltage Balancing Control Scheme for 2/3-Level DAB Converters
   Chaochao Song, Ariya Sangwongwanich, Yongheng Yang, Frede Blaabjerg
   Show (Yes/No): Comments:

11:43-11:56 Distributed Predictive Control using Frequency and Voltage Soft Constraints in AC Microgrids including Economic Dispatch of Generation
   Alex Navas-Fonseca, Claudio Burgos-Mellado, Juan S. Gomez, Jacqueline Llanos, Enrique Espina, Doris Saez, Mark Sumner
   Show (Yes/No): Comments:

11:56-12:09 A New Robust Control Strategy for Grid-Forming Voltage Source Converters
   Saeed Ouni, S. Milad Hoseinizadeh, Houshang Karimi, Jean Mahseredjian
   Show (Yes/No): Comments:

12:09-12:22 On Droop-based Voltage and Frequency Restoration Techniques for Islanded Microgrids
   Iresha Poonahela, Sertac Bayhan, Haitham Abu-Rub, Miroslav Begovic, Mohammad Shadmand
   Show (Yes/No): Comments:

12:22-12:35 Space Vector Modulation Scheme for Three-Phase Single-Stage SEPIC-Based Grid-Connected Differential Inverter
   Ahmed Shawky Ahmed Shawky, Mokhtar Aly, Emad M. Ahmed, Samir Kouro, Jose Rodriguez
   Show (Yes/No): Comments:

12:35-12:48 Control of Grid-tied Dual-PV LLC Converter using Adaptive Neuro Fuzzy Interface System (ANFIS)
   Sumana Ghosh, Abdullah Alhatlani, Reza Rezaei, Issa Batarseh
   Show (Yes/No): Comments:
47th Annual Conference of the IEEE Industrial Electronics Society

Room L
Thursday, 14 October 2021
11:30 - 12:50

S461 - SS Model Predictive Control for Power Converters

Chairs: Fadia SEBAALY, Hadi Y. KANAAN

11:30-11:43 Direct Predictive Control for a Nine-Level Packed E-Cell (PEC9) Converter Based Shunt Active Power Filter (SAPF)
   Fadia Sebaaly, Hadi Y. Kanaan, Jose Rodriguez, Kamal Al-Haddad
   Show (Yes/No):  Comments:

11:43-11:56 Weighting Factorless Sequential Model Predictive Control Method with Fixed Switching Frequency for Five-Level T-type Photovoltaic Inverters
   Mokhtar Aly, Fernanda Carnielutti, Ahmed Shawky, Emad M. Ahmed, Margarita Norambuena, Samir Kouro, Jose Rodriguez
   Show (Yes/No):  Comments:

11:56-12:09 Rapid Stabilization of DC Microgrids with CPLs: Nonlinear Model Predictive Control
   Elham Kowsari, Jafar Zarei, Roozbeh Razavi-Far, Mehrdad Saif
   Show (Yes/No):  Comments:

12:09-12:22 Modulated Model Predictive Control for a Four-Leg Indirect Matrix Converter
   Mohammad Hosseinzadeh, Maryam Sarebanzadeh, Marco Rivera, Javier Munoz
   Show (Yes/No):  Comments:

12:22-12:35 A Model Predictive Current Control for a Three-Phase Modular Matrix Converter
   Maryam Sarebanzadeh, Mohammad Ali Hosseinzadeh, Marco Rivera, Javier Munoz
   Show (Yes/No):  Comments:

12:35-12:48 Model Predictive Control for an Improved Transformer-less Five-level PV Inverter Topology
   Maryam Sarebanzadeh, Mohammad Hosseinzadeh, Cristian Garcia, Margarita Norambuena, Jose Rodriguez
   Show (Yes/No):  Comments:
S102 - SS Advances in Component and System Modeling and Simulation of Power Systems in Transition to Converter-Dominated Systems

Chairs: Phylicia Cicilio, Timothy Hansen

11:30-11:43 Diesel Generator Model Development and Validation using Moving Horizon Estimation
   Manisha Rauniyar, Phylicia Cicilio, Niranjan Bhujel, Ujjwol Tamrakar, Timothy M. Hansen, Mariko Shirazi, Robert Fourney, Hossein Moradi Rekabdarkolaee, Reinaldo Tonkoski
   Show (Yes/No): Comments:

   Chinmay Shah, Phylicia Cicilio, Mariko Shirazi, David Light, Dayne Broderson, Richard Wies, Manisha Rauniyar, Reinaldo Tonkoski, Timothy M. Hansen
   Show (Yes/No): Comments:

11:56-12:09 Cable Insulation Aging Simulation
   Xuan Wang, Ahmed Arman, Mohammad Ali, Bin Zhang
   Show (Yes/No): Comments:

12:09-12:22 Power factor optimization with semi-definite programming relaxation in three-phase wireless power transfer systems for electric vehicles
   Shuang Nie, Zhichao Luo, Peter Lehn
   Show (Yes/No): Comments:

12:22-12:35 Analyzing Rectangular Coil Wireless Power Transfer Based on Time Domain Discontinue Galerkin Method
   Homa Arab, Bita Arab, Steven Dufour, Kamal AL-Haddad
   Show (Yes/No): Comments:

12:35-12:48 Evaluation of DC-DC buck-boost partial power converters for EV fast charging application
   Rodrigo Venegas Muñoz, Hugues Renaudineau, Sebastian Rivera, Samir Kouro
   Show (Yes/No): Comments:
T043 - TT Electrical Machines and Drives

Chairs: Xueqian Wang, Gaolin Wang

07:00-07:13 Capacitor Current Reduction of Double Three Phase PMSM Drive System by Real-time MPC
   Akiyoshi Suzuki, Shinji Doki, Koji Imai, Yasuaki Aoki, Kosuke Kondo
   Show (Yes/No): Comments:

07:13-07:26 Grid Current Harmonic Suppression for Motor Drive with Reduced DC-Link Capacitance in Weak Grid
   Zekun Ren, Gaolin Wang, Dawei Ding, Guoqiang Zhang, Nannan Zhao, Dianguo Xu
   Show (Yes/No): Comments:

07:26-07:39 Voltage-Current Hybrid Model Based Extended Flux Observer with Multiple SOGIs for Sensorless IPMSM Drives
   Zhibin Feng, Guoqiang Zhang, Siqi Wang, Gaolin Wang, Dianguo Xu
   Show (Yes/No): Comments:

07:39-07:52 Online Estimation of DC-Link Capacitance for Permanent Magnet Synchronous Motor Drive with Reduced DC-Link Capacitor
   Bingqi Zhou, Gaolin Wang, Runfeng Gao, Guoqiang Zhang, Nannan Zhao, Dianguo Xu
   Show (Yes/No): Comments:

07:52-08:05 Unknown Disturbance Compensation Control of PMSM based on Extended State Observer
   Ziqiang Zhang, Xianting Zhang, Ruiqing Ma, Peng Chen, Weizhou Yang
   Show (Yes/No): Comments:

08:05-08:18 A Modified Current Controlled Induction Motor Drive Based on Steady State Model of Vector Drive Using Proportional Resonant Controllers in Stationary Reference Frame
   Himanshu Swami, Amit Kumar Jain
   Show (Yes/No): Comments:
S291 - SS Emerging NearField Wireless Power Transfer Technologies

Chairs: Minfan Fu, Ming Liu

07:00-07:13 Bidirectional High-Frequency Inductive Power Transfer Systems Based on Differential Load-Independent Class EConverters
Yifan Jiang, Heyuan Li, Minfan Fu
Show (Yes/No): Comments:

Shunya Kuroda, Takehiro Imura
Show (Yes/No): Comments:

07:26-07:39 A Modular Stacked Architecture with Virtual AC Bus for Multi-port Wireless Energy Interconnection System
Minghua Zhou, Fuxin Liu, Kelin Lei, Xuling Chen
Show (Yes/No): Comments:

07:39-07:52 Analysis and Optimization of High-Power MCR Bidirectional WPT System With High Distance-Diameter Ratio
Haojie Shen, Fuxin Liu, Chaoyang Yan, Xuling Chen
Show (Yes/No): Comments:

07:52-08:05 Proposal of Sensorless Vehicle Detection Method for Start-up Current Control in Dynamic Wireless Power Transfer System
Takumi Hamada, Daisuke Shirasaki, Toshiyuki Fujita, Hiroshi Fujimoto
Show (Yes/No): Comments:

08:05-08:18 Optimal Coil Design and Control Strategy for a High-power and Medium-frequency Wireless Power Transfer System
Xiang Hao, Huan Zhang, Jibin Song, Ming Liu, Chengbin Ma
Show (Yes/No): Comments:
S091 - SS Advanced signal and image processing techniques for condition monitoring of Electric Machines and Drives

Chairs: Jose A Antonino-Daviu, Hubert Razik

07:00-07:13 On-line Method for High-sensitivity Leakage Current Measurement of Converter-connected Transformers in Microgrids
   Geye Lu, Yang Wu, Dayong Zheng, Pinjia Zhang
   Show (Yes/No): Comments:

07:13-07:26 Light-weight Convolutional Neural Network for Distracted Driver Classification
   Duy-Linh Nguyen, Putro Muhamad Dwisnant0, Xuan-Thuy Vo, Kang-Hyun Jo
   Show (Yes/No): Comments:

07:26-07:39 A New Diagonally Implicit Implementation of the Continuous-Discrete Extended Kalman Filters for State and Parameter Estimation of Nonlinear Dynamic Systems
   Jean-Marie Guihal, Francois Auger, Nicolas Bernard, Emmanuel Schaeffer
   Show (Yes/No): Comments:

07:39-07:52 Mechanical fault detection for induction motors based on vibrational analysis: a case study
   Verdiana Del Rosso, Andrea Andreucci, Simonetta Boria, Maria Letizia Corradini, Antonio Ranalli
   Show (Yes/No): Comments:

07:52-08:05 Local Mahalanobis Distance Envelope Using A Robust Healthy Domain Approximation For Incipient Fault Diagnosis
   Junjie Yang, Claude Delpha
   Show (Yes/No): Comments:

08:05-08:18 A Three-Phase Current Reconstruction Algorithm for an Improved Fault Tolerant Control Using Positive Fundamental Component Estimator
   Abdelilah Chibani, Abdelmadjid Gouichiche, Zakaria Chedjara, Yacine Badaoui, Patrice Wira, Ahmed Safa
   Show (Yes/No): Comments:
47th Annual Conference of the IEEE Industrial Electronics Society

Room D

Friday, 15 October 2021
07:00 - 08:20

S051 - SS Advanced Sensing and Control for Intelligent Robots

Chairs: Zhan Li, Yang SHI

07:00-07:13 Immersive Operation System for Hexapod Robot with Follow-the-Contact-Point Gait Control
Yuya Murai, Shinkichi Inagaki, Tatsuya Suzuki
Show (Yes/No): Comments:

07:13-07:26 Local identification of 3D point cloud based on structured light
Zhang Jiahao, Zhang Jian
Show (Yes/No): Comments:

07:26-07:39 A Multi-target Tracking Algorithm for Fast-moving Workpieces Based on Event Camera
Yuanze Wang, Chenlu Liu, Sheng Li, Tong Wang, Weiyang Lin, Xinghu Yu
Show (Yes/No): Comments:

07:39-07:52 Path Planning of Mobile Robot Based on Adaptive Ant colony algorithm
Xiuqing Yang, Ni Xiong, Yong Xiang, Mingqian Du, Xinzhi Zhou, Yong Liu
Show (Yes/No): Comments:

07:52-08:05 Trajectory Control and Simulation of 6-DOF Robotic System Based On Screw Theory
Yong Xiang, Xiaoke Deng, Yi Chen, Chenlu Liu, Xiaobo Xu, Mao Li
Show (Yes/No): Comments:

08:05-08:18 Subpixel segmentation for ceramic defects
Weihua Liu, Xianqiang Yang, Yimin Wang, Xuebo Yang, Weiyang Lin
Show (Yes/No): Comments:
47th Annual Conference of the IEEE Industrial Electronics Society

Room E

Friday, 15 October 2021
07:00 - 08:20

T023 - TT Control System, Robotics and Automation

Chairs: Zhiguang Feng, Qinyuan Ren
07:00-07:13 Tele-driving including time-varying delay based on MPC with stability constraints
Hiroki Nagakura, Yuhei Hatori, Yutaka Uchimura
Show (Yes/No): Comments:

07:13-07:26 Multi-surface Sliding Mode Control of a Thrust Vectored Quadcopter with a Suspended Double Pendulum Weight
Clevon Peris, Michael Norton, Sui Yang Khoo
Show (Yes/No): Comments:

07:26-07:39 Plug-and-play adaptation in autopilot architectures for unmanned aerial vehicles
Peng Li, Di Liu, Simone Baldi
Show (Yes/No): Comments:

07:39-07:52 Multi-Agent Cooperative Pursuit-Evasion Control Using Gene Expression Programming
Yinjie Ni, Shuhua Gao, Sunan Huang, Cheng Xiang, Qinyuan Ren, Tong Heng Lee
Show (Yes/No): Comments:

07:52-08:05 sGS-sPALM for Optimal Decentralized Control: A Distributed Optimization Approach
Xiaoxue Zhang, Jun Ma, Zilong Cheng, Wenxin Wang, Xiaolong Chen, Tong Heng Lee
Show (Yes/No): Comments:

08:05-08:18 An Effective Neuro-adaptive Control Approach for Underwater Flexible Cranes With Uncertainties
Yue Wang, Zhengguo Zheng, Ning Sun, Tong Yang, He Chen, Zhuoqing Liu
Show (Yes/No): Comments:
T073 TT Motion Control and Mechatronics

Chairs: Zhang Chen, Feng Shu

07:00-07:13 Fault Tolerance Algorithm of Steering Actuator in Three-Wheeled Electric Mobility Based on Model Predictive Control
   JungHyun Choi, Hiroshi Fujimoto, Sehoon Oh
   Show (Yes/No): Comments:

   Wenxin Wang, Jun Ma, Zilong Cheng, Xiaoxue Zhang, Xiaolong Chen, Xiaocong Li, Tong Heng Lee
   Show (Yes/No): Comments:

07:26-07:39 Fractional-Order Sliding Mode Control with Adaptive Neural Network for High-Precision Position Control of Reluctance Actuators
   Zidong Liu, Yunlang Xu, Pan Wang, Xiaofeng Yang, Zhi Li, Feng Shu
   Show (Yes/No): Comments:

07:39-07:52 Autonomous Parameter Design for Cascade Structure Feedback Controller Based on Time and Frequency Domain Optimization
   Eitaro Kuroda, Yoshihiro Maeda, Makoto Iwasaki
   Show (Yes/No): Comments:

07:52-08:05 Cascaded NMPC for the Precise Position Control of a Pneumatic Actuator
   Ricus Husmann, Harald Aschemann
   Show (Yes/No): Comments:

08:05-08:18 A nonlinear optimal control approach for voltage source inverter-fed three-phase PMSMs
   Gerasimos Rigatos, Masoud Abbaszadeh, Patrice Wira, Pierluigi Siano
   Show (Yes/No): Comments:
47th Annual Conference of the IEEE Industrial Electronics Society

Room G
Friday, 15 October 2021
07:00 - 08:20

S121 - SS Advances in Electric Vehicle Charging and Next Generation Wireless Technology

Chairs: Rajesh Gupta, Karthikeyan V.

07:00-07:13  Bidirectional Power Flow Control of Single Phase Matrix Converter Based Hybrid WPT for E-Vehicle Charging and Discharging
   Abhishek Singhal, Narsa Reddy Tummuru
   Show (Yes/No):   Comments:

07:13-07:26  Wind Energy based EV Charging Station along with Power Quality Enhancement
   Zubaida Khan, Rajesh Gupta
   Show (Yes/No):   Comments:

   Yuto Yamada, Takehiro Imura
   Show (Yes/No):   Comments:

07:39-07:52  A Rack Coil for Metal Foreign Object Detection in WPT System
   Chao Qi, Hongyu Duan, Junwei Guo, Tian Sun, Wenwu Wang, Funing Yang
   Show (Yes/No):   Comments:

07:52-08:05  Proposal of Ferrite-less and Capacitor-less 85 kHz Four-layer Coil for Stationary Wireless Power Transfer
   Koki Hanawa, Takehiro Imura
   Show (Yes/No):   Comments:

08:05-08:18  A Novel Type of V-Trench SiC-MOSFET and an Improved High-Power Single-Ended Inverter for very Low Loss Operation
   Shougo Hirooka, Hideki Omori, Kunihiro Sakamoto, Toshimitsu Morizane, Hidehito Matayoshi
   Show (Yes/No):   Comments:
T123 - TT Signal and Image Processing and Computational Intelligence

Chairs: Xianke Dong, Bernhard Haslhofer

07:00-07:13 Learning Rule Optimization and Comparative Evaluation of Accelerated Self-Organizing Maps for Industrial Applications
  Madhavi Gayathri, Amanda Ariyaratne, Sachin Kahawala, Daswin De Silva, Daminda Alahakoon, Vishaka Nanayakkara, Evgeny Osipov, Xinghuo Yu
  Show (Yes/No): Comments:

07:13-07:26 Adaptive change detection of the temperature pattern of the face for identifying deceit
  Saswata Satpathi, Sourav Bagchi, Aurobinda Routray, Parthasarathi Satpathi, Ritwik Dash
  Show (Yes/No): Comments:

07:26-07:39 On an improved F0 estimation based on l2-norm regularized TV-CAR speech analysis using pre-filter
  Keiichi Funaki
  Show (Yes/No): Comments:

07:39-07:52 Attention based Object Classification for Drone Imagery
  Choi Jehwan, Jo Kanghyun
  Show (Yes/No): Comments:

07:52-08:05 Human Face Detection and Tracking Using RetinaFace Network for Surveillance Systems
  Moh. Edi Wibowo, Ahmad Ashari, Ardacandra Subiantoro, Wahyono Wahyono
  Show (Yes/No): Comments:

08:05-08:18 Transfer Learning Strategies for Anomaly Detection in IoT Vibration Data
  Clemens Heistracher, Anahid Jalali, Indu Strobl, Axel Suendermann, Sebastian Meixner, Stephanie Holly, Daniel Schall, Bernhard Haslhofer, Jana Kemnitz
  Show (Yes/No): Comments:
T093 - TT Power Electronics & Energy Conversion

Chairs: Yulin Si, Kaiyun Lu

07:00-07:13 Modeling and Design Considerations in the Control of an Isolated Bidirectional Electric Vehicle Charger
   Goutam Ghosh, Viju Nair
   Show (Yes/No): Comments:

07:13-07:26 Design and Experiment of a New Wave Power Conversion Device for Self-Powered Sensor Buoy
   Hengyu Wang, Weimin Wu, Lixun Zhu, Eftichios Koutroulis, Kaiyun Lu, Frede Blaabjerg
   Show (Yes/No): Comments:

07:26-07:39 Two-Stage Wide-Output High-Frequency-Voltage Inverter for Electrosurgical Generator
   Ling Gu, Lingchen Wang
   Show (Yes/No): Comments:

07:39-07:52 A Voltage Overshoot Design Method for DC-DC Converter Based on State Overshoot Concept
   Hong Li, Qian Liu, Zhipeng Zhang, Xiaoheng Jiang, Guoen Cao, Yajing Zhang
   Show (Yes/No): Comments:

07:52-08:05 Multistage High Gain DC-DC Converter Topologies using SDLC Network for DC microgrid
   Sija Gopinathan, V. Seshagiri Rao, Kumaravel S
   Show (Yes/No): Comments:

08:05-08:18 A Virtual Inertia Control Strategy with Current Feedforward to Improve Voltage Stability for Power Router
   Shaokun Niu, Tong Liu, xl Liu, Qicai Ren, Zhiwei Chen, Alian Chen
   Show (Yes/No): Comments:
47th Annual Conference of the IEEE Industrial Electronics Society

Room J
Friday, 15 October 2021
07:00 - 08:20

T131 - TT TT Renewable Energy Systems and Smart Grid

Chairs: Yang Tang, Brendan McGrath

07:00-07:13 A Novel Spotted Hyena Optimization for MPPT under Partial Shading Conditions
Swetha K.T., Barry Venugopal Reddy, Abin Robinson, Rohit Kumar Jain
Show (Yes/No): Comments:

Ying Wang, Yong Gang Li, Xiuting Sun, Shumin Zhao
Show (Yes/No): Comments:

07:26-07:39 A Low-cost and Stand-alone Ground Based Sensing Station for Efficient Solar Forecasting in PV Power Systems
Qiyang Lei, Xiaozhou Liu, Weidong Xiao, Yang Du
Show (Yes/No): Comments:

07:39-07:52 Dynamic Flexible Power Point Tracking in Photovoltaic Power Plants
Aditi Narang, Ghias G. Farivar, Hossein D. Tafti, Salvador Ceballos, Josep Pou, Christopher D. Townsend, Georgios Konstantinou
Show (Yes/No): Comments:

07:52-08:05 Novel Shade Dispersion Method to Extract Maximum Power under partial shading condition
Vinaya Chandrakant Chavan, Suresh Mikkili, Praveen Kumar Bonthagarla
Show (Yes/No): Comments:

08:05-08:18 Solar PV Detection Using an Optimal Template Approach with Genetic Algorithm
Wenhua Ling, Geordie Dalzell, Xinghuo Yu, Brendan McGrath, Peter Sokolowski
Show (Yes/No): Comments:
S032 - SS Advanced Electrical Machines and Drives for Transportation Electrification

Chairs: Qingsong Wang, Xing Zhao

07:00-07:13  Speed Synchronous Control of Dual-BLDCMs based on MRAC for a Hoist Application
   Weizhou Yang, Ruiqing Ma, Tianxing Li, Qianbao Mi, Ziqiang Zhang, Jiayong Peng
   Show (Yes/No):  Comments:

07:13-07:26  Phase-lead Repetitive Control of a PMSM with Field-oriented Feedback Linearization and a disturbance observer
   Yusai Zheng, Zhenwei Cao, Zhihong Man, Artheec Kumar, Song Wang
   Show (Yes/No):  Comments:

07:26-07:39  Networked PMSM System with Multiple-step Predictive Control and Sliding Mode Control
   Yanmin Wang, Guangxin Duan, Yuchen Liu
   Show (Yes/No):  Comments:

07:39-07:52  Multi-Objective Optimization of a Quadruple 3-Phase Inductive Electrically Excited Synchronous Machine for 48V Traction Drives
   Andreas Gneiting, Nejila Parspour
   Show (Yes/No):  Comments:

07:52-08:05  AC Losses Analysis Approaches for Electric Vehicle Motors with Hairpin Winding Configuration
   Payam Shams Ghahfarokhi, Andrejs Podgornovs, Antonio J. Marques Cardoso, Ants Kallaste, Anouar Belahcen, Toomas Vaimann
   Show (Yes/No):  Comments:

08:05-08:18  Rapid analytical method to evaluate eddy current losses in hairpin wound IM due to PWM
   Lino Di Leonardo, Andrea Credo, Marco Tursini, Marco Villani
   Show (Yes/No):  Comments:
S243 - SS DCDC Converters, Modeling, Control and Applications

Chairs: Mahajan Sagar Bhaskar, Sanjeevikumar Padmanaban

07:00-07:13 A Novel Switching Loss Analysis of Coupled-Inductor Impedance-Source Inverters
Hongpeng Liu, Lai Wei, Qingchao Kong

Show (Yes/No): Comments:

07:13-07:26 Comprehensive Analysis on the Imbalance of Voltage and Current in Multi-module Series-parallel WPT Systems
Shuci Yu, Fuxin Liu, Minghua Zhou, Xuling Chen

Show (Yes/No): Comments:

07:26-07:39 Small Signal Modeling of Series Resonant Converter based on State-plane Analysis
Vishal Anand Aisur Gopalakrishnan, Utsab Kundu, Ranganathan Gurunathan, Kaushik Basu

Show (Yes/No): Comments:

07:39-07:52 A High efficiency and High power density Asymmetrical Half-bridge Flyback Converter for Data Centers
Mingxiao Li, Ziwei Ouyang, Michael A.E. Andersen

Show (Yes/No): Comments:

07:52-08:05 Power loss modelling and efficiency optimization of a multi-output Flyback converter
Fabio Cacciotto, Mirko Sciotino, Danilo Termini, Mario Cacciato, Santi Agatino Rizzo, Giacomo Scelba

Show (Yes/No): Comments:

08:05-08:18 Novel Isolated Multiple-Input Buck-Boost DC-DC Converter for Renewable Energy Sources
Immanuel Ninma Jiya, Huynh Van Kang, Ahmed Salem, Nand Kishor, Rade Ciric

Show (Yes/No): Comments:
47th Annual Conference of the IEEE Industrial Electronics Society

Room M

Friday, 15 October 2021
07:00 - 08:20

S421 - SS Internet of Things Technology for Industrial Smart City Applications

Chairs: Umair Mujtaba QURESHI, Zuneera UMAIR

07:00-07:13  Designing a System for Data-driven Risk Assessment of Solar Projects
Zuneera Umair, Inez M. Zwetsloot, Luk Kin Ming Marco, Jiwoo Shim, Daniil Kostromin

Show (Yes/No):  Comments:

07:13-07:26  A Two-step Barrier Coverage Redeployment Strategy for Hybrid Sensor Networks
Hao Zhou, Gong Chen, Yonghua Xiong, Jinhua She

Show (Yes/No):  Comments:

07:26-07:39  Mobile Proximity Channel Using Vibration
Kam Hon Lau, Umair Mujtaba Qureshi, Bruno Silva, Gerhard Petrus Hancke

Show (Yes/No):  Comments:

07:39-07:52  Activity Monitoring of the Potential COVID-19 Individuals in Quarantine Facility
Mehak Fatima Qureshi, Rizwan Ahmed Kango, Nafeesa Zaki, Faisal Karim Shaikh

Show (Yes/No):  Comments:

07:52-08:05  Altitude Calibration toward Floor Change Detection
Benjawan Srisura, Piyakul Tillapart, Suparwat Charoenvikrom, Songsak Channarukul

Show (Yes/No):  Comments:

08:05-08:18  A Differential Evolution Approach to Trust based Ridesharing Systems
Fu-Shiung Hsieh

Show (Yes/No):  Comments:
S342 - SS Fuel Cell System Application in Transportation Electrification

Chairs: Rui Ma, Elena Breaz

07:00-07:13 An Optimization Energy Management Strategy Based on Dynamic Programming for Fuel Cell UAV

Yigeng Huangfu, Tianying Yu, Shengrong Zhuo, Wenzhao Shi, Zelong Zhang

Show (Yes/No): Comments:

07:13-07:26 PEMFC water management fault diagnosis method based on principal component analysis and support vector data description

Lu Jingjing, Gao Yan, Zhang LuYu, Li Kai, Yin Cong

Show (Yes/No): Comments:


Weibo Zheng, Liangfei Xu, Zunyan Hu, Yujie Ding, Jianqiu Li, Minggao Ouyang

Show (Yes/No): Comments:


Yonglu Chen

Show (Yes/No): Comments:

07:52-08:05 Observer-based Adaptive Sliding Mode Control of Interleaved Boost Converter for Fuel Cell Vehicles

Xinyang Hao, Issam Salhi, Salah Lagrouche, Youcef Ait Amirat, Abdesslem Djerdir

Show (Yes/No): Comments:

08:05-08:18 Dynamic Modelling of Fuel Cell Systems for Electric Propulsion

Nastaran Shakeri, Mehdi Zadeh

Show (Yes/No): Comments:
47th Annual Conference of the IEEE Industrial Electronics Society

Room 0
Friday, 15 October 2021
07:00 - 08:20

S221 - SS DC Grid Technologies and Applications DC Grid Technologies, Circuit Breakers, Protection and Control

Chairs: Satish Naik Banavath, Harish Krishnamoorthy

07:00-07:13 A Boost Converter Integrated With DC Circuit Breaker
   Yuyang Liu, Yufeng Wang, Shuai Ding, Yufei Tao, Weilin Li
   Show (Yes/No): Comments:

   Muhammed Ajmal C, Venkata Raghavendra Itte, Satish Naik B
   Show (Yes/No): Comments:

07:26-07:39 H-bridge Based Bidirectional Z-Source DC Circuit Breaker with Improved Device Stress and Automatic Reclosing Capability
   Venkata Raghavendra Itte, Satish Naik B, Sreekanth Thamballa
   Show (Yes/No): Comments:

07:39-07:52 Enhancement of Power Rating for a Bidirectional DC Circuit Breaker using Modular Commutation Circuits
   Shubham Agrawal, Subba Reddy B, Loganathan Umanand
   Show (Yes/No): Comments:

07:52-08:05 Comparison of Switching Patterns of SVM for a Novel High Gain Indirect Matrix Converter
   Maraka Israyelu, Sashidhar Sampathirao
   Show (Yes/No): Comments:

08:05-08:18 Current Source Isolated Bidirectional Series Resonant DC-DC Converter for Solar Power/Fuel Cell and Energy Storage Application
   Kiran Bathala, Dharavath Kishan, Nagendrappa Harischandrappa
   Show (Yes/No): Comments:
S571 - SS Power Efficiency and Smart Measures Based on Advanced Techniques

Chairs: Djaffar OULD ABDESLAM, Dirk Benyoucef

07:00-07:13 Recommendation System for Energy Consumption Behavior Change on Residents’ Response and Stress
  Yuki Takayama, Yuiko Sakuma, Hiroaki Nishi
  Show (Yes/No): Comments:

07:13-07:26 High Frequency PCB Trace Current Measurement in Power Converters Based on Tunnel Magnetoresistance
  Weicong Lin, Shuai Shao, Junming Zhang
  Show (Yes/No): Comments:

07:26-07:39 Air-Conditioning Control with Spatial Recognition Using Stereo Infrared Array Sensors
  Yuki Takayama, Saki Saito, Yuiko Sakuma, Hiroaki Nishi
  Show (Yes/No): Comments:

07:39-07:52 An Improved Incremental Conductance Based MPPT Algorithm for Photovoltaic Systems
  Yacine Triki, Ali Bechouche, Hamid Seddiki, Djaffar Ould Abdeslam
  Show (Yes/No): Comments:

07:52-08:05 Hybrid AI improves Energy Forecasts by combining Fuzzy Rules, Evolutionary Strategies and Neural Networks
  Matthias Lermer, Christoph Reich, Djaffar Ould Abdeslam
  Show (Yes/No): Comments:
S731 - SS Static and dynamic wireless charging solution for EVs Coil configuration, design, and control of power electronics converters

Chairs: Subrata Banerjee, Kundan Kumar
07:00-07:13 Methodology of Inductive Power Transfer Asymmetrical Coils Design for Space-Constrained Applications
   Hou-Wa Wong, Kin-long Leong, Io-Wa Iam, Lok-U Hoi, Chi-Seng Lam
   Show (Yes/No): Comments:

07:13-07:26 Three-element compensation network for DWPT systems for power transfer boosting
   Rupesh Kumar Jha, Sireesha Tamada, Anand Kumar, Swati Jaiswal, Giuseppe Buja
   Show (Yes/No): Comments:

   Chio-Kuan Choi, Io-Wa Iam, Lok-U Hoi, Chi-Seng Lam
   Show (Yes/No): Comments:

07:39-07:52 Comparative Analysis of Classical and Predictive Control of Bidirectional Quasi Z-Source Converter
   Md Tuhin Rana, Anurag Sarkar, Md Abid, Subrata Banerjee, Kundan Kumar
   Show (Yes/No): Comments:

07:52-08:05 Simulation Analysis of Different Operating Modes of ZETA-SEPIC Converter for Electrical Vehicles
   Ankit Sagathiya, Ronak Babariya, Jiten Chavda, Saraswat Shivani
   Show (Yes/No): Comments:

08:05-08:18 Parallel Collaborative Motion Planning with Alternating Direction Method of Multipliers
   Xiaoxue Zhang, Zilong Cheng, Jun Ma, Lin Zhao, Cheng Xiang, Tong Heng Lee
   Show (Yes/No): Comments:
S311 - SS Emerging Techniques in Design, Optimization, and Interconnection with the Grid for Solar Photovoltaic System

Chairs: Mohd Tariq, Ali I. Maswood

07:00-07:13 A Single Input Dual Output High Gain DC-DC Converter With Reduced Voltage Stress
Shahrukh Khan, Kush Varshney, Mohammad Zaid, Mohd Tariq, Javed Ahmad, Zeeshan Sarwer
Show (Yes/No): Comments:

07:13-07:26 CORDIC based Orthogonal Signal Generation with In-loop Moving Average Filter for Single Phase PLL Systems
Muddasani Satyanarayana, A V Ravi Teja
Show (Yes/No): Comments:

07:26-07:39 Flexible Power Point Tracking Algorithm for Photovoltaic Systems Using the Newton's Method
Anusha Kumaresan, Hossein Dehghani Tafti, Glen G. Farivar, Naga Brahmandra Yadav Gorla, Neha Beniwal, Josep Pou
Show (Yes/No): Comments:

07:39-07:52 A Novel Converter-level Si Material Degradation Monitoring Method Based on the DC Bus Leakage Current
Qinghao Zhang, Geye Lu, Pinjia Zhang
Show (Yes/No): Comments:

07:52-08:05 Adaptive Active Grounding Fault Regulation Method Considering the Influence of Line Impedance in Distribution Network
Yuchao Hou, Qi Guo, Chunming Tu, Jiayuan Gao, Fei Jiang, Fan Xiao
Show (Yes/No): Comments:

08:05-08:18 A Novel Method for Calculating the Three-phase Unbalanced Shunt Compensation Current in the Low Voltage Distribution Network
Li Yin, Alian Chen
Show (Yes/No): Comments:
Resonant Power Conversion: Insights from a Lifetime of Experience
Praveen Jain
Queen's University, Canada
Chairs: Makoto Iwasaki,
Plenary & Keynote

Friday, 15 October 2021
09:00 - 09:30

IECON 2021 Keynote 6: Jay Iyengar

Trends in Off-Hwy vehicle Electrification Technology
Jay Iyengar
Chief Technology Officer, CNH Industria
Chairs: Makoto Iwasaki,
Room C

Friday, 15 October 2021
10:00 - 10:20

ICELIE 2021 Opening

Chairs: Larisa Dunai, Gayan Kahandawa
T048 - TT Electrical Machines and Drives

Chairs: Qingsong Wang, Xing Zhao

10:00-10:13 Enhanced Cooling of Multilayer PCB Motor Windings Using Thermal Vias
   Andreas Bauer, Benjamin H. Zacher, Christian Schumann
   Show (Yes/No): Comments:

10:13-10:26 Saliency-Based Position Sensorless Control of a Heavily Cross-Saturated PMSM
   Richard Spiessberger, Andreas Brunner, Manfred Schroedl
   Show (Yes/No): Comments:

10:26-10:39 Thermal Modelling of a Liquid Cooled Traction Machine with 8-layer Hairpin Windings
   Antonino La Rocca, Tianjie Zou, Mohsen Moslemin, David Gerada, Chris Gerada, Alasdair Cairns
   Show (Yes/No): Comments:

10:39-10:52 Design and Optimization of a Quadruple 3-Phase Permanent Magnet Assisted Synchronous Reluctance Machine
   Dennis Grundmann, Andreas Gneiting, Julian Marius Fischer, Nejila Parspour
   Show (Yes/No): Comments:

10:52-11:05 Prediction of the Impact of Thermal Cycling on Machine Lifetime Based on Accelerated Life Testing and Finite Element Analysis
   David A. Hewitt, Jiabin Wang
   Show (Yes/No): Comments:

11:05-11:18 Steady-state Thermal Analysis of the Contact in Bearings Exposed to Electrical Currents
   Omid Safdarzadeh, Martin Weicker, Andreas Binder
   Show (Yes/No): Comments:
47th Annual Conference of the IEEE Industrial Electronics Society

Room B
Friday, 15 October 2021
10:00 - 11:20

T0412 - TT Electrical Machines and Drives

Chairs: Shoujun Song, Atif Iqbal
10:00-10:13 Lifetime characterization of partial discharge properties of insulation material exposed to voltage pulse stress
   Ali Qerkini, Markus Vogelsberger, Werner Grubelnik, Edgar Moser, Thomas Wolbank
   Show (Yes/No): Comments:

10:13-10:26 A Novel Resistance Optimization Approach for Non-Regenerative Resistive Dynamic Braking for PMSM
   Melih Nafi Ekim, Alpay Oguz Unal, Ali Bekir Yildiz
   Show (Yes/No): Comments:

10:26-10:39 Performance Comparison of Different IPM Motor Topologies for Spindle Motor Drives
   Oguzhan Ocak, Mehmet Gulec, Metin Aydin
   Show (Yes/No): Comments:

10:39-10:52 Speed, EMF and Rotor Position Estimation of PMSM using Phase Locked Loop and Simple Sliding Mode Observer
   Mihai Comanescu
   Show (Yes/No): Comments:

10:52-11:05 Modified Virtual Inertia Mechanism Based ESS for A real Multi-Source Power System Application: the Egyptian Grid
   Hussein Abubakr, Josep M. Guerrero, Juan C. Vasquez
   Show (Yes/No): Comments:

11:05-11:18 Real-time simulation Model of Ultracapacitors for Frequency Stability Support from Wind Generation
   Chenrui Zhang, Elyas Rakhshani, Nidarshan Veera Kumar, Jose Luis Rueda Torres, Peter Palensky, Francisco Gonzalez-Longatt
   Show (Yes/No): Comments:
47th Annual Conference of the IEEE Industrial Electronics Society

Room D

Friday, 15 October 2021
10:00 - 11:20

INTEROP3 - IEEE 1451 & Wireless Interface

P1451.0, Lee/Song/Schmalzel
P1451.5X, Kim Fung Tsang
IEEE 1451 & IEC 61499 Interoperability, Reza Abrishambaf
OPEN DISCUSSIONS
Chairs: Allen Chen, Eugene Song
T028 - TT Control System, Robotics and Automation

Chairs: Yunsong Xu, Okyay Kaynak
10:00-10:13 Robust Discrete-Time Sliding-Mode Control for a Duocopter Using an Extended Kalman Filter
   Joey-Falk Woitas, Harald Aschemann
Show (Yes/No): Comments:

10:13-10:26 Flexible Multibody System Model of a Spider Crane with two Extendable Booms
   Anja Patricia Regina Lauer, Boris Blagojevic, Otto Lerke, Volker Schwieger, Oliver Sawodny
Show (Yes/No): Comments:

10:26-10:39 Change-based causes in counterexample explanation for model checking
   Polina Ovsiannikova, Antti Pakonen, Valeriy Vyatkin
Show (Yes/No): Comments:

10:39-10:52 Efficient Polyline Surface Mapping with Strong Error Bounds
   Yujie Lian, Georg Rempfer, Hadi Askaripoor, Jonas Landsgesell, Alois Knoll
Show (Yes/No): Comments:

10:52-11:05 Robust Fault-Tolerant Control Design for Fuzzy Networked Control Systems with Data Drift and Sensor Failure
   Jafar Zarei, Hossein Kargar, Roozbeh Razavi-Far, Mehrdad Saif
Show (Yes/No): Comments:

   Razvan Andrei Budau Petrea, Massimiliano Bertoni, Roberto Oboe
Show (Yes/No): Comments:
S161 - SS Advances in Renewable Energy Systems Resilient Control

Chairs: Mohamed Benbouzid, Hafiz Ahmed

10:00-10:13 A Data-Driven Detection strategy of False Data in Cooperative DC Microgrids
Yixian Yang, Li Guo, Xialin Li, Jiaxin Li, Wei Liu, Huihui He
Show (Yes/No): Comments:

10:13-10:26 Combined Control of Grid Connected Converters for Resiliency Improvement of Smart Micro Grids against Multiple Risks
Mohammadsadegh Eslahi, Sadegh Vaez-Zadeh, Jose Rodriguez
Show (Yes/No): Comments:

10:26-10:39 A Modified Perturb and Observe MPPT Method for Photovoltaic Power Systems
Rasool Kahani, Mohsin Jamil
Show (Yes/No): Comments:

10:39-10:52 Using Electric Water Heater Tank as an Energy Storage Solution to Solve the Duck Curve Issue
Nicolas Sockeel, Sumit Srivastava, Benjamin Futrell, Robert Cox, Michael Mazzola
Show (Yes/No): Comments:

10:52-11:05 Hybrid Fault-Tolerant and Cyber-Resilient Control for PV System at Microgrid Framework
Saeedreza Jadidi, Hamed Badihi, Youmin Zhang
Show (Yes/No): Comments:

11:05-11:18 PLL-Based Sensorless Control for Single-Stage Current Source Inverter in Motor Drive Application
Emilio Carfagna, Giovanni Migliazza, Giampaolo Buticchi, Emilio Lorenzani, Zhuang Xu, Zhixiang Zou, He Zhang
Show (Yes/No): Comments:
Room G
Friday, 15 October 2021
10:00 - 11:20

T065 - TT Industrial Automation, Communication, Networking and Informatics

Chairs: Jan Haase, Alexander Fay
10:00-10:13 Towards the Digitization using Asset Administration Shells
   Lucas Sakurada, Paulo Leitao, Fernando De la Prieta
   Show (Yes/No): Comments:

   Fabio Amaral, Lucas Sakurada, Paulo Leitao, Jorge Larangeira
   Show (Yes/No): Comments:

10:26-10:39 Middleware Architecture for Application Layer Interoperability of Standardized Digital Representations
   Harish Kumar Pakala, Alexander Belyaev, Christian Diedrich
   Show (Yes/No): Comments:

10:39-10:52 Co-Design Process for Upskilling the Workforce in the Factories of the Future
   Carla Geraldes, Florbela Fernandes, Lucas Sakurada, Ann Lilith Rasmussen, Rene Bennyson, Umberto Pellegri, Paulo Leitao
   Show (Yes/No): Comments:

10:52-11:05 Towards cloud-based virtual commissioning of distributed automation applications with IEC 61499 and containerization technology
   Tuojian Lyu, Udayanto Atmojo, Valeriy Vyatkin
   Show (Yes/No): Comments:

11:05-11:18 Missing Data Imputation for Real Time-series Data in a Steel Industry using Generative Adversarial Networks
   Kisan Sarda, Amol Yerudkar, Carmen Del Vecchio
   Show (Yes/No): Comments:
S301 - SS Emerging Techniques in Design, Optimization and Testing of Traction Electric Machines for Electrified Transportation

Chairs: Wenlong Li, Mohammad Sedigh Toulabi
10:00-10:13 Sustainability Aspects of Electrical Machines For E-Mobility Applications Part II: Aluminium Hairpin vs. Copper Hairpin
   Alessandro Acquaviva, Michela Diana, Bharadwaj Raghuraman, Linnea Petersson, Shafigh Nategh
   Show (Yes/No): Comments:

10:13-10:26 Multiobjectively optimized PMSynRM cooling for increased vehicle efficiency
   Raik C. Orbay, Alexandra Tokat, Michele Becciani, Torbjörn Thiringer, Georgios Mademlis, Aditya Pratap Singh, Carl Holmberg
   Show (Yes/No): Comments:

10:26-10:39 Performance Comparison Between Rare-Earth and Ferrite-based PM Transverse Flux Generator for Small-Scale Direct-Drive Wind Turbine
   Reza Nasiri-Zarandi, Ahmadreza Karami-Shahnani, Mohammad Sedigh Toulabi
   Show (Yes/No): Comments:

   Tim Stachl, Areej Fatima, Mohammad Sedigh Toulabi, Wenlong Li, Anthony Lombardi, Jimi Tjong, Narayan C. Kar
   Show (Yes/No): Comments:

10:52-11:05 Permeance-Based Equivalent Circuit Modeling of Induction Machines Considering Leakage Reactances and Non-Linearity for Steady-State Performance Prediction
   Areej Fatima, Tim Stachl, Mohammad Sedigh Toulabi, Wenlong Li, Jimi Tjong, Glenn Byczynski, Narayan C. Kar
   Show (Yes/No): Comments:

11:05-11:18 Improvement of Electromagnetic Force and Acceleration in an Asymmetrical Star-Delta Winding IPMSM through Stator and Rotor Geometrical Modifications
   Pengzhao Song, Mohammad Sedigh Toulabi, Wenlong Li, Shruthi Mukundan, Glenn Byczynski, Jimi Tjong, Narayan C. Kar
   Show (Yes/No): Comments:
T097 - TT Power Electronics & Energy Conversion

Chairs: Gonzalo Abad, Samir Kouro

10:00-10:13 Current Sensorless Control Strategy for Nine-Level Packed-E-Cell Rectifier
   Naki Guler, Hasan Komurcugil, Sertac Bayhan, Samet Biricik
   Show (Yes/No): Comments:

10:13-10:26 Comprehensive Analysis of Harmonic Signature Resulting from Open Switch Fault in Interleaved Boost Converter
   Abdelmadjid Gouichiche, Yacine Badaoui, Ahmed Safa, Abdelilah Chibani, Mohamed Benbouzid, Zakaria Chedjara
   Show (Yes/No): Comments:

10:26-10:39 Modeling, Analysis and Control of Current Source Converter
   Quentin Combe, Serge Pierfederici, Mathieu Weber, Stephane Dufour
   Show (Yes/No): Comments:

10:39-10:52 General DAB 1st Harmonic TPS State Space Model
   Simon Uicich, Jean-Yves Gauthier, Xuefang Lin Shi, Bruno Allard, Arnaud Plat
   Show (Yes/No): Comments:

10:52-11:05 On the impact of controller implementations on passivity and damping properties in grid-following MMC-HVdc applications
   Carolin Hirsching, Alexander Bisseling, Simon Wenig, Max Goertz, Christina Bischoff, Michael Suriyah, Thomas Leibfried
   Show (Yes/No): Comments:

11:05-11:18 Managing Inrush Current in A Variable Speed Drive Short Term Power Interruption Ride-Through Module
   Freeman Chiranga, Lesedi Masisi
   Show (Yes/No): Comments:
47th Annual Conference of the IEEE Industrial Electronics Society

Room J

Friday, 15 October 2021
10:00 - 11:20

T132 - TT TT Renewable Energy Systems and Smart Grid

Chairs: Fernando Lezama, Zita A. Vale
10:00-10:13 Implementation and Performance Analysis for Energy Harvesting-based Wireless Sensor Networks
   Nga Dinh Haugen, ØYstein Tveito, Phuong Ha, Otto Anshus
   Show (Yes/No): Comments:

10:13-10:26 ANN Based Power Management Strategy For Standalone Microgrids
   Preetha Sreekumar, Maitha Alhosani, Vinod Khadkikar
   Show (Yes/No): Comments:

10:26-10:39 Generation of a TMY for Tripoli City Using the Finkelstein –Schaefer Statistical Method
   Farag Alargt, Yosof Khalifa, Ahmad Kharaz
   Show (Yes/No): Comments:

10:39-10:52 Design and Computational Fluid Dynamics Simulation of a Novel Stirred Photo-Bioreactor
   Rayane Hijazi, Jihane Rahbany Mounsef, Hadi Y. Kanaan
   Show (Yes/No): Comments:

10:52-11:05 Adaptive nonlinear control of floating wind turbines: new adaptation law and comparison
   Mohammed Taleb, Alice Marie, Cheng Zhang, Mohamed Hamida, Pierre-Etienne Testelin, Franck Plestan
   Show (Yes/No): Comments:

11:05-11:18 An Overview of Grid-Forming Control for Wind Turbine Converters
   Yun Yu, Sanjay K. Chaudhary, Saeed Golestan, Gibran David Agundis Tinajero, Juan C. Vasquez, Josep M. Guerrero
   Show (Yes/No): Comments:
S034 - SS Advanced Electrical Machines and Drives for Transportation Electrification

Chairs: Qingsong Wang, Xing Zhao

10:00-10:13 Lyapunov Function based Stability Analysis of Symmetric Induction Machine
Ramkrishan Maheshwari, Deepak Patil, Sanjeet Dwivedi, Thomas Ebel
Show (Yes/No): Comments:

10:13-10:26 Multiphysics Design and Modeling of Rotating Electrical Machines
Mostafa Ahmadi Darmani, Silvio Vaschetto, Andrea Cavagnino
Show (Yes/No): Comments:

10:26-10:39 An Eco-driving Strategy for an Electric Bus: IPMSM Drive-train
Robson Jele, Lesedi Masisi
Show (Yes/No): Comments:

10:39-10:52 Analysis and Control Development of IPM Traction Machines with Skewed Rotor using Unskewed Machine Model
Khoa Dang Hoang, Panagiostic Lazari, Kais Atallah
Show (Yes/No): Comments:

10:52-11:05 A multi-phase multilevel powertrain for full electric aircraft
Simone Tedeschini, Sobhan Mohamadian, Carlo Cecati
Show (Yes/No): Comments:

11:05-11:18 Internal Model Based Speed Estimation and Lyapunov Energy Function Based Control of a Surface Mount PMSM for Electric Vehicle Application
Vikram Roy Chowdhury, Sara Yazdani, Dwaipayan Barman, Md Multan Biswas, Dhiman Chowdhury
Show (Yes/No): Comments:
47th Annual Conference of the IEEE Industrial Electronics Society

Room L

Friday, 15 October 2021
10:00 - 11:20

S351 - SS Futureproof Power Electronic Systems and Control for Residential Microgrids

Chairs: Dmitri Vinnikov, Enrique Romero-Cadaval

10:00-10:13  Performance Evaluation of the Universal Photovoltaic String Converter During the Operation in DC Microgrid Environment
  Oleksandr Matiushkin, Dmitri Vinnikov, Oleksandr Husev
  Show (Yes/No):  Comments:

10:13-10:26  Energy Management of an Isolated Microgrid: A Practical Case
  Ali Ghasemi-Marzbal, Roya Ahmadihangar, Sina Gouran Orimi, Mohammad Shafiei, Tobias Häring, Argo Rosin
  Show (Yes/No):  Comments:

10:26-10:39  Machine Learning Approach for Flexibility Characterisation of Residential Space Heating
  Tobias Häring, Roya Ahmadihangar, Argo Rosin, Helmuth Biechl
  Show (Yes/No):  Comments:

10:39-10:52  New High-Gain Non-Inverting Buck-Boost Converter
  Omar Abdel-Rahim, Andrii Chub, Dmitri Vinnikov, Andrei Blinov
  Show (Yes/No):  Comments:

10:52-11:05  Kalman-filter Based Maximum Power Point Tracking for a Single-Stage Grid-Connected Photovoltaic System
  Ehsan Farrokhi, Hoda Ghoreishy, Roya Ahmadihangar, Argo Rosin
  Show (Yes/No):  Comments:

11:05-11:18  Current-Fed Partial Power Converter for Photovoltaic Applications in DC Microgrids
  Tanel Jalakas, Roman Kosenko, Andrii Chub, Dmitri Vinnikov, Andrei Blinov
  Show (Yes/No):  Comments:
S422 - SS Internet of Things Technology for Industrial Smart City Applications

Chairs: Umair Mujtaba QURESJI, Gerhard Petrus HANCKE

10:00-10:13 OTP-Based Symmetric Group Key Establishment Scheme for IoT Networks
   Sujash Naskar, Tingting Zhang, Gerhard Hancke, Mikael Gidlund
   Show (Yes/No): 
   Comments:

10:13-10:26 IoT Bicycle Sharing Service for Smart City Transport
   Riaan Fourie, Musa Ndiaye, Gerhard Hancke
   Show (Yes/No): 
   Comments:

10:26-10:39 Empirical Analysis of LoRaWAN-based Adaptive Data Rate Algorithms
   Charles Lehong, Bassey Isong, Francis Lugayizi, Adnan Abu-Mahfouz
   Show (Yes/No): 
   Comments:

10:39-10:52 A Lyapunov-based Real Time Energy Management System for Smart IoT Homes
   Hailing Zhu, Khmaies Ouahada, Adnan Abu-Mahfouz
   Show (Yes/No): 
   Comments:

10:52-11:05 A Machine Learning approach to Intrusion Detection in Water Distribution Systems Literature Review
   Ignitious Mboweni, Daniel Ramotsoela, Adnan Abu-Mahfouz
   Show (Yes/No): 
   Comments:

   Devashen Govender, Jayendran Moodley, Reevana Balmahoon
   Show (Yes/No): 
   Comments:
**S541 - SS Multiphase machines and their controls**

**Chairs:** Mohan Aware, Atif Iqbal

10:00-10:13 **Sensorless controls of a 7-phase bi-harmonic Surface-mounted PM Machine**
   *Florent Becker, Franck Scuiller*
   
   Show (Yes/No): Comment:

10:13-10:26 **Hybrid Resonant Induction Machine for High-Speed Applications**
   *Ahmad Abduallah, Yoshiyuki Komi, Rajesh Deodhar, Chiaki Umemura*

   Show (Yes/No): Comment:

10:26-10:39 **Availability analysis and quantification of electrical multiphase machines**
   *Louis Dassonville, Jean-Yves Gauthier, Xuefang Lin-Shi, Ali Makki, Alexandre Siccardi*

   Show (Yes/No): Comment:

10:39-10:52 **Modelling, Harmonic Compensation, and Current Sharing Between Winding Sets of Asymmetric Nine-Phase PMSM**
   *Sobhan Mohamadian, Carlo Cecati*

   Show (Yes/No): Comment:

10:52-11:05 **A Novel Spoke Type Interior PM Rotor Structure for a 9-Phase Unbalanced and Asymmetric Winding Motor**
   *Yucel Demir, Metin Aydin*

   Show (Yes/No): Comment:

11:05-11:18 **Virtual-Flux Finite Set Model Predictive Control of Dual-Three Phase IPMSM Drives**
   *William Agnihotri, Diego Valencia, Wesam Taha, Babak Nahid-Mobarakeh*

   Show (Yes/No): Comment:
47th Annual Conference of the IEEE Industrial Electronics Society

Room O
Friday, 15 October 2021
10:00 - 11:20

S721 - SS Solid State Transformer for Modern Power Grid

Chairs: Marco Liserre, Pradyumn Chaturvedi
10:00-10:13  Potentials and Challenges of Multiwinding Transformer-Based DC-DC Converters for Solid-State Transformer
  Thiago Pereira, Felix Hoffmann, Rongwu Zhu, Marco Liserre
  Show (Yes/No):  Comments:

  Pedro Costa, Sónia Pinto, Fernando Silva
  Show (Yes/No):  Comments:

10:26-10:39  New Operation Opportunities for the Solid State Transformer in Smart Homes: A Comprehensive Analysis
  Vitor Monteiro, Joao Lopes, Carlos Moreira, Joao Afonso
  Show (Yes/No):  Comments:

10:39-10:52  Inverter and Battery Drive Cycle Efficiency Comparisons of Multilevel and Two-Level Traction Inverters for Battery Electric Vehicles
  Nina Sorokina, Julian Estaller, Anton Kersten
  Show (Yes/No):  Comments:

10:52-11:05  Optimal Switching Sequence Model Predictive Control for Single-Phase Cascaded H-Bridge
  Pablo Jesús Gómez García, Luis Galván García-Pérez, Eduardo Galván Díez, Juan Manuel Carrasco Solís, Sergio Vázquez Pérez
  Show (Yes/No):  Comments:

11:05-11:18  Half-Bridge Trans-Z-Source Inverter with High Boost Factor
  Hamed Mashinchi Maher, Elias Shokati Asl, Ebrahim Babaei, Mehran Sabahi, Dmitri Vinnikov
  Show (Yes/No):  Comments:
Room C

Friday, 15 October 2021
10:20 - 10:50

ICELIE 2021 Keynote 1: Luis Gomes
Room C
Friday, 15 October 2021
10:50 - 11:20

ICELIE 2021 Keynote 2: Hamadou Saliah Hassane
47th Annual Conference of the IEEE Industrial Electronics Society

Room A

Friday, 15 October 2021
11:30 - 12:50

T0415 - TT Electrical Machines and Drives

Chairs: Abhijit Choudhury, Hind Dirani

11:30-11:43 On the Influence of Air-gap Length Variations in Low-Speed Linear Three-phase Electrical Induction Motors
   Rolando Caicedo Castro, Ernesto Ruppert Filho
   Show (Yes/No): Comments:

   Guilherme Alves Arantes, Stefan T. C. Alves dos Santos, Paulo R. Ubaldo Guazzelli, Manoel Luís de Aguiar
   Show (Yes/No): Comments:

11:56-12:09 Switched Reluctance Motor Design for an EV Propulsion Application
   Omar Zayed, Mohamed Omar, Mohamed Bakr, Mehdi Narimani, Ali Emadi, Berker Bilgin
   Show (Yes/No): Comments:

12:09-12:22 Comprehensive Analysis of High-Speed Cascaded H-Bridge (CHB) Medium-Voltage Adjustable Speed Drives
   Omar Zayed, Ahmed Elezab, Mehdi Narimani, George Cheng, Navid Zargari
   Show (Yes/No): Comments:

12:22-12:35 Estimation of Electrical Parameters of the Single-, Double- and Triple-Cage Models of Induction Motors Using Manufacturer Data
   Matheus Perin, Luis A. Pereira, Gabriel B. da Silveira, Dhamens M. S. Almansa, Iuri Marcelo, Luis G. Cavichioli
   Show (Yes/No): Comments:

12:35-12:48 Analysis of Measurement Error Compensation of Stationary & Stator Currents done through Auto-Associative Neural Network
   Thyago Estrabis, Matheus Pelzl, Raymundo Cordero, Walter Suemitsu, Luigi Galotto, Gabriel Gentil
   Show (Yes/No): Comments:
47th Annual Conference of the IEEE Industrial Electronics Society

Room B

Friday, 15 October 2021
11:30 - 12:50

T0213 - TT Control System, Robotics and Automation

Chairs: Ya-jun Pan, Gabor Sziebig

11:30-11:43 Electric Wheelchair Sensing and Control Algorithms for Users with Neurological Disorders
Norberto Scarone, Gustavo Monte, Ruben Bufanio, Damian Marasco, Ariel Agnello, Pablo Liscovsky
Show (Yes/No): Comments:

L.H. Keel, S.P. Bhattacharyya
Show (Yes/No): Comments:

11:56-12:09 Stabilizing Set Based Design of Digital Controllers Based on Mikhailov's Criterion
M. A. Rahman, L. H. Keel, S. P. Bhattacharyya
Show (Yes/No): Comments:

12:09-12:22 Assistive Robotics: Robotic Trajectory Planning for Upper Extremity Rehabilitation in Patients with Hemiparesis
Sibyla Andreuchetti Vioto e Silva, Victor Barros Coch, Mateus Borges de Oliveira Pinto, Vinicius Menezes Oliveira
Show (Yes/No): Comments:

12:22-12:35 Distributed Adaptive Protocol for Asymptotic Consensus for a Networked Euler-Lagrange Systems with Uncertainty
Shafiqul Islam, Jorge Dias, Gurdial Arora, Anderson Sunda-Meya
Show (Yes/No): Comments:

12:35-12:48 Distributed Tracking Synchronization Protocol for a Networked of Leader-follower Unmanned Aerial Vehicles with Uncertainty
Shafiqul Islam, Jorge Dias, Anderson Sunda-Meya
Show (Yes/No): Comments:
ICE1 - ICELIE

Chairs: Martin Novak, David Checa

11:30-11:43  Teaching Devices and Controls during the Pandemic  
             Jie Sheng
             Show (Yes/No): Comments:

11:43-11:56  Effectiveness of multi-abstraction computing tools on promoting exploratory self-learning in engineering: a case study using a custom Real-Time Operating System for remote learning  
             Paulo Garcia
             Show (Yes/No): Comments:

11:56-12:09  Virtual reality-based tool applied in the teaching and training of condition-based maintenance in induction motors  
             David Checa, Andres Bustillo, Juan Jose Saucedo-Dorante, Roque A Osornio-Rios, Irving Armando Cruz-Albarran
             Show (Yes/No): Comments:

12:09-12:22  Delivery of online electronics and mechatronics labs during lockdowns  
             Amal Jayawardena, Gayan Kahandawa, Lasitha Piyathilaka
             Show (Yes/No): Comments:

12:22-12:35  SensorQuad The Flying Sensor Platform for Teaching  
             Martin Novak
             Show (Yes/No): Comments:

12:35-12:48  Educational experiences on virtual teaching of electric motors condition monitoring courses  
             Jose Antonino-Daviu, Larisa Dunai
             Show (Yes/No): Comments:
S052 - SS Advanced Sensing and Control for Intelligent Robots

Chair: Yiyong Sun, Weiyang LIN

11:30-11:43 FF-GAT: Feature Fusion Using Graph Attention Networks
   Ahmed N. Ahmed, Ali Anwar, Siegfried Mercelis, Steven Latre, Peter Hellinckx
   Show (Yes/No): Comments:

11:43-11:56 Multiple-Pilot Collaboration for Advanced Remote Intervention using Reinforcement Learning
   Ziwei Wang, Weibang Bai, Zhang Chen, Bo Xiao, Bin Liang, Yeatman Eric M.
   Show (Yes/No): Comments:

11:56-12:09 Dynamic Kalman filter-based velocity tracker for Intelligent vehicle
   Md Asif Khan, Tegveer Singh, Akramul Azim, Vivek Burhanpurkar, Rodolphe Perrin
   Show (Yes/No): Comments:

12:09-12:22 Positioning Improvement for a Laser Scanning System using cSORPD control
   Jose A. Nunez-Lopez, Lars Lindner, Oleg Sergiienko, Julio C. Rodriguez-Quinonez, Wendy Flores-Fuentes, Paolo Mercorelli
   Show (Yes/No): Comments:

12:22-12:35 Stiffness Estimation in Single Degree of Freedom Mechanisms using Regression
   Aravind B. Balasubramanian, David P. Magee, David G. Taylor
   Show (Yes/No): Comments:

12:35-12:48 Application of social constraints for dynamic navigation considering semantic annotations on geo-referenced maps
   Joao Pedro Vilasboas, Marcelo Sampaio, Giovane Moreira, Adriel Souza, Jose Amado, Dennis Aranibar, Yudith Cardinale, Joao Soares
   Show (Yes/No): Comments:
47th Annual Conference of the IEEE Industrial Electronics Society

Room E

Friday, 15 October 2021
11:30 - 12:50

TUT05 - Ethics of Artificial Intelligence and Automation for Industrial Applications

Presenters
Daswin De Silva
Associate Professor
La Trobe University, Victoria, Australia

Donna Burnett
Ethics and Governance Lead
La Trobe University, Victoria, Australia

Damien Trentesaux
Research Center UMR CNRS 8201, Automation & Control Department
INSA Hauts-de-France State Engineering School

Stamatis Karnouskos
SAP, Germany
TUT06 - Transient stability of power electronics-dominated power networks: principle and application

Presenters
Prof. Hua Geng
Professor
Tsinghua University, China

Dr. Xiuqiang He
Post-doc
Tsinghua University, China
47th Annual Conference of the IEEE Industrial Electronics Society

Room G
Friday, 15 October 2021
11:30 - 12:50

TUT07 - Electric Vehicles and Role of Power Electronics in Fast Charging-Impact on Grid, Challenges, Trends and Future

Presenters
P. Sanjeevikumar
CTiF Global Capsule, Aarhus University, Denmark

M. S. Bhaskar
Prince Sultan University (PSU), Saudi Arabia

Irfan Khan
Texas A&M University, TX, USA
Room H
Friday, 15 October 2021
11:30 - 12:50

TUT08 - Extended Kalman Filters for State of Charge Estimation: Modelling, Implementation and Performance Monitoring

Presenter
Dr. Balakumar Balasingam
Assistant Professor
University of Windsor, Canada
47th Annual Conference of the IEEE Industrial Electronics Society

Room I
Friday, 15 October 2021
11:30 - 12:50

T0911 - TT Power Electronics & Energy Conversion

Chairs: Mohammad Sharifzadeh, Fadia Sebaaly

11:30-11:43  A Novel Step-down Three-Port Power Converter for Semi-Isolated Renewable and Hybrid Energy Storage System Applications
    Sina Vahid, Pouya Zolfi, Ayman EL-Refaie
    Show (Yes/No): Comments:

11:43-11:56  Voltage-Control Reference Estimation-based Quadratic Integration-exploited Model Predictive Current Control-driving Binary Capacitor Voltage Control-based MMC
    Sanghun Choi, A. P. Meliopoulos
    Show (Yes/No): Comments:

11:56-12:09  Optimal Common-Mode Voltage for Maximum Power Transfer of Grid-Tied PV CHB Inverters
    Felipe Calderon, Alejandro Angulo, Pablo Acuna
    Show (Yes/No): Comments:

    Pouya Zolfi, Sina Vahid, Ayman EL-Refaie
    Show (Yes/No): Comments:

12:22-12:35  A Novel Non-Isolated Multi-Port DC-DC Converter for Hybrid Streetcar Application
    Pouya Zolfi, Sina Vahid, Ayman EL-Refaie
    Show (Yes/No): Comments:

12:35-12:48  PLL-based Clock Recovery Stability Analysis for Distributed Power Electronics Communication Networks with Sub-nanosecond Synchronization Accuracy
    Yu Rong, Jun Wang, Zhiyu Shen, Boran Fan, Dushan Boroyevich, Rolando Burgos
    Show (Yes/No): Comments:
47th Annual Conference of the IEEE Industrial Electronics Society

Room J

Friday, 15 October 2021
11:30 - 12:50

T134 - TT TT Renewable Energy Systems and Smart Grid

Chairs: Bachir Kedjar, Subrata Banerjee

11:30-11:43 Emulation of A Self-Excited Induction Generator Feeding Nonlinear Loads
Yupeng Liu, Pragasen Pillay
Show (Yes/No): Comments:

11:43-11:56 Low Cost PV Emulator Based on Programmable DC Power Supply and LabVIEW
Loenel Estrada, Nimrod Vazquez, Julio Ortega, Héctor López, Claudia Hernández, Joaquin Vaquero
Show (Yes/No): Comments:

11:56-12:09 Equivalent Circuit Parameter Extraction of PV Modules using Light Intensity Modulation Impedance Spectroscopy
Sean Youngblood, Thomas Link, Adrian Gibson, Aaditya Sekar, Sung-Yeul Park
Show (Yes/No): Comments:

12:09-12:22 Model Predictive Control Horizon Impact Over the Flexibility of a Net Zero Energy Building
Juan Oviedo-Cepeda, Fatima Amara, Andreas Athienitis
Show (Yes/No): Comments:

12:22-12:35 Power based Fault Detection Method for PV Arrays
Harrison Illes, Yousef Mahmoud
Show (Yes/No): Comments:

12:35-12:48 Modeling and Validation of Renewable Energy Sources in the OpenIPSL Modelica Library
Fernando Fachini, Luigi Vanfretti, Marcelo de Castro, Tetiana Bogodorova, Giuseppe Laere
Show (Yes/No): Comments:
S033 - SS Advanced Electrical Machines and Drives for Transportation Electrification

Chairs: Qingsong Wang, Xing Zhao

11:30-11:43 A Flexible Model of PMSM to Design High Density Traction Systems for Electric Vehicles
   Benoit Blanchard St-Jacques, Adib Ghadamryari, Ruisheng Shi, Pragasen Pillay
   Show (Yes/No): Comments:

   Buddhika De Silva Guruwatta Vidanalage, Mohammad Sedigh Toulabi, Wenlong Li, Anthony Lombardi, Jimi Tjong, Narayan. C Kar
   Show (Yes/No): Comments:

11:56-12:09 Comparative study of losses in the AHB converter driving SRMs through Hysteresis and PI-PWM current controllers
   Gustavo Xavier Prestes, Rodrigo Padilha Vieira
   Show (Yes/No): Comments:

12:09-12:22 Finite Control Set Model Predictive Control for Switched Reluctance Motor Drives with Reduced Torque Tracking Error
   Rasul Tarvirdilu-Asl, Shamsuddeen Nalakath, Diego F. Valencia, Berker Bilgin, Ali Emadi
   Show (Yes/No): Comments:

12:22-12:35 A Novel Control Strategy to Mitigate the Parameter Saturation Problems in Synchronous Reluctance Machines
   Anant Singh, Ramakrishnan Raja, Tomy Sebastian, Amina Shrestha, Md Sariful Islam, Kaushik Rajashekar
   Show (Yes/No): Comments:

12:35-12:48 Torque Ripple Minimization Control Strategy in Synchronous Reluctance Machines
   Anant Singh, Ramakrishnan Raja, Tomy Sebastian, Kaushik Rajashekar
   Show (Yes/No): Comments:
S244 - SS DCDC Converters Circuits, Modeling, Control and Applications

Chairs: Mahajan Sagar Bhaskar, Sanjeevikumar Padmanaban
11:30-11:43  A Novel Expandable Diode-Capacitor Based DC-DC Converter with High Voltage Gains
   Zahra Saadatizadeh, Xiaodong Liang
   Show (Yes/No):           Comments:

11:43-11:56  Dynamic Phasor-Based Modeling and Analysis of Dual-Loop Controlled DC-DC Converters
   Udoka C. Nwaneto, Andrew M. Knight
   Show (Yes/No):           Comments:

11:56-12:09  Dynamic Modeling and Online Parameter Identification of a Coupled-Inductor-Based DC-DC Converter with Leakage Inductance Effect Consideration
   Amir Farakhor, Huazhen Fang
   Show (Yes/No):           Comments:

12:09-12:22  ZVS/ZCS Three-Winding Coupled Inductor Based Non-isolated Bidirectional DC-DC Converter with Ripples Elimination at High Current Port and MPPT of Photovoltaic Systems
   Zahra Saadatizadeh, Xiaodong Liang
   Show (Yes/No):           Comments:

12:22-12:35  Open Circuit Fault-tolerant Operation of a Modified Hybrid String Inverter/Rectifier Leg
   Reza Emamalipour, John Lam
   Show (Yes/No):           Comments:

12:35-12:48  A Two-Phase Interleaved High-Voltage Gain DC-DC Converter with Coupled Inductor and Built-in Transformer for Photovoltaic Applications
   Ramin Rahimi, Saeed Habibi, Mehdi Ferdowsi, Pourya Shamsi
   Show (Yes/No):           Comments:
S531 - SS Multilevel and High Power Density
ACDC, DCAC, DCDC Converter Topology
selection, Design, Control and Applications

Chairs: Abhijit Choudhury, Sandeep Anand
11:30-11:43  The Modular Multilevel Magnetic Stimulator: Energy-Efficiency, Pre-Charging and Overlap Protection
  Benjamin Lohse, Florian Schwitzgebel, Fabian Neukirchinger, Anton Kersten, Manuel Kuder, Thomas Weyh
  Show (Yes/No):  Comments:

11:43-11:56  Design and Experimental Study of a GaN-based Three-Port Multilevel Inverter
  Mohamed Tamasas Elrais, Issa Batarseh
  Show (Yes/No):  Comments:

11:56-12:09  A 70kW Three-Level Active Neutral Point Clamped Traction Inverter PCB Design for Optimizing the Stray Inductance and Thermal Performance
  Yicheng Wang, Amirreza Poorfakhraei, Mehdi Narimani, Ali Emadi
  Show (Yes/No):  Comments:

12:09-12:22  Comparison of two modulated model predictive control strategies applied to a three-level three-phase voltage source inverter
  Josue Andino, Paúl Ayala, Jacqueline Llanos, Diego ÑAuñAy, Wilmar Martinez, Diego Arcos-Aviles
  Show (Yes/No):  Comments:

12:22-12:35  An HVDC inverter based on the Asymmetric Alternate Arm Converter with thyristor valves
  Diego Soto-Sanchez, Rubén Peña, Lorena Flores, Iván Andrade, Ramón Blasco-Gimenez
  Show (Yes/No):  Comments:

12:35-12:48  Back To Back Modular Multilevel Converter With Dynamic Hybrid Link For High Performance Drive
  Jonathan Lillo, Felix Rojas, Dario Valdes, Javier Pereda, Roberto Cardenas
  Show (Yes/No):  Comments:
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Room N
Friday, 15 October 2021
11:30 - 12:50

S661 - SS Recent Advances in Power Conversion Topologies and Control Algorithms for PV Systems under Normal and Abnormal Conditions

Chairs: Kawther Ezzeddine, Mahmoud Hamouda
11:30-11:43 Stability Analysis of Grid-connected PV Farms with High Switching Frequency Power Electronics
   Mohammad Mahdavyfakhr, Isla Ziyat, Patrick Palmer
   Show (Yes/No): Comments:

11:43-11:56 Topologies and Control Strategies of Partial Power DC/DC Converters for Photovoltaic Systems
   Nicolas Weldt, Jose Espinoza, Daniel Sbarbaro, Luis Moran, Samir Kouro
   Show (Yes/No): Comments:

11:56-12:09 Real-time Modeling of Offshore Wind Turbines for Transient Simulation and Studies
   Thai-Thanh Nguyen, Tuyen Vu, Thomas Ortmeyer, George Stefopoulos, Greg Pedrick, Jason MacDowell
   Show (Yes/No): Comments:

12:09-12:22 TVS Diode Coupled Gate Driver Circuit for Series Connected Power Devices used in Circuit Breaker Applications
   Lakshmi Ravi, Jian Liu, Dong Dong, Rolando Burgos, Xiaoqing Song, Pietro Cairoli
   Show (Yes/No): Comments:

12:22-12:35 Phase Change Material Cooling for Wide Band-Gap Switching Devices
   Taosha Jiang, Xiaoqing Song, Utkarsh Raheja, Pietro Cairoli
   Show (Yes/No): Comments:

12:35-12:48 An 800V/300 kW, 44 kW/L Air-Cooled SiC Power Electronics Building Block (PEBB)
   Zibo Chen, Houshang Salimian, Chen Chen, Pengkun Liu, Ruiyang Yu, Alex Q. Huang
   Show (Yes/No): Comments:
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Room 0
Friday, 15 October 2021
11:30 - 12:50

S222 - SS DC Grid Technologies and Applications DC Grid Technologies, Circuit Breakers, Protection and Control

Chairs: Satish Naik Banavath, Sreekanth Thamballa
  Zhongying Wang, E. M. Sankara Narayanan
  Show (Yes/No): Comments:

11:43-11:56 A Dual-Bridge Hybrid DC Circuit Breaker
  Hanwen Zhang, Gen Li, Yanbo Wang, Chuang Liu, Zhe Chen
  Show (Yes/No): Comments:

11:56-12:09 Solid-State Circuit Breaker Component Simulation
  Matthew Hughes, Nathan Weise
  Show (Yes/No): Comments:

12:09-12:22 Sliding Mode Current Observer for a Bidirectional Dual Active Bridge Converter
  Farzaneh Bagheri, Naki Guler, Hasan Komurcugil
  Show (Yes/No): Comments:

12:22-12:35 Embedded Electrochemical Impedance Spectroscopy into Battery Management System
  Desmon Simatupang, Abdulraouf Benshatti, Sung-Yeul Park
  Show (Yes/No): Comments:

12:35-12:48 A Novel Modular, Reconfigurable Battery Energy Storage System Design
  Amir Farakhor, Huazhen Fang
  Show (Yes/No): Comments:
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Room A
Saturday, 16 October 2021
07:00 - 08:20

T044 - TT Electrical Machines and Drives

Chairs: Qingbin Gao, Dan Xiao

07:00-07:13 Hybrid Ferrite Al-Ni-Co PM Assisted Synchronous Reluctance Motor for Air-Conditioner Compressors
   Vegireddy Gowtham, Sashidhar Sampathirao
   Show (Yes/No): Comments:

07:13-07:26 Deadbeat Predictive Direct Torque and Active Flux Control with Disturbance Observer
   S M Showybul Shakib, Dan Xiao, Rukmi Dutta, Muhammed Rahman
   Show (Yes/No): Comments:

07:26-07:39 Discrete Adaptive Full-Order Observer for Speed Sensorless Induction Motor Drives under Low PWM-to-Output Frequencies Ratio
   Yong Yu, Wenbo Zhao, Bo Wang, Dianguo Xu
   Show (Yes/No): Comments:

07:39-07:52 Implementation of PSO Algorithm for Speed Control of Brushless DC Motor
   Suraj Kamde, Meghraj Morey
   Show (Yes/No): Comments:

07:52-08:05 Performance Analysis and Fault Modelling of High Resistance Contact in Brushless DC Motor Drive
   Annima Gupta, Kalaiselvi Jayaraman, Sugunakar Ravula Reddy
   Show (Yes/No): Comments:

08:05-08:18 Position and Speed Estimation in Low Speed Range for IPMSM Based on Disturbance Observer
   Ryosuke Nakatsu, Takahiro Nozaki
   Show (Yes/No): Comments:
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Room B
Saturday, 16 October 2021
07:00 - 08:20

S021 - SS Advanced Control of GridConnected Converters for Distributed Generation and Power Quality

Chairs: Hadi Y. KANAAN, Mohammad SHARIFZADEH
07:00-07:13 Reduced DC Voltage Fed Grid Connected Transformer-less Shunt Compensator with AC-Side Impedance-Source Configuration
   Goudy Satpathy, Burle Tulasi Rao, Dipankar De
Show (Yes/No): Comments:

07:13-07:26 Improved Quality of Compensation in Three-Level Shunt Active Power Filter Using Fractal Approach Based Current Hysteresis Controller
   Siddharthsingh K. Chauhan, M. T. Shah, Dr. P. N. Tekwani
Show (Yes/No): Comments:

07:26-07:39 Design of IDA-PBC Controller for LCL-Filtered Grid-Connected Inverter
   Min Huang, Fan Chen, Zhicheng Zhang, Weimin Wu, Zhilei Yao, Lixun Zhu
Show (Yes/No): Comments:

07:39-07:52 A Decentralized Adaptive SOC Balancing Strategy in VSG-based Islanded Power System
   Meng Chen, Dao Zhou, Frede Blaabjerg
Show (Yes/No): Comments:

07:52-08:05 Adaptive Vector Control of Grid-tied VSC using Multilayer Perceptron-Recurrent Neural Network
   Prabhat Ranjan Bana, Mohammad Amin
Show (Yes/No): Comments:

08:05-08:18 A time scale based energy management strategy for hybrid energy storage system in DC Microgrid
   Mohamed Mroueh, Sarah Kassir, Moustapha Doumiati, Clovis Francis, Mohamed Machmoum
Show (Yes/No): Comments:
47th Annual Conference of the IEEE Industrial Electronics Society

Room C
Saturday, 16 October 2021
07:00 - 08:20

ICE2 - ICELIE

Chairs: Truong Phung, Eiji Hiraki

07:00-07:13 Project-Based Learning Using Remote-Controlled Plane for Students in Machatronic Course
   Kou Miyamoto, Jinhua She
   Show (Yes/No): Comments:

07:13-07:26 Development of an Experimental System for Remote Learning
   Jinseok Woo, Tatsuya Kurihara, Yasuhiro Ohyama
   Show (Yes/No): Comments:

07:26-07:39 Tiny Approaches to the Interactive online lectures under the COVID-19 pandemic
   Eiji Hiraki, Masataka Ishihara, Kazuhiro Umetani
   Show (Yes/No): Comments:

07:39-07:52 E-Learning challenges for electronics and mechatronics education during lockdowns
   Amal Jayawardena, Gayan Kahandawa, Mark Petty
   Show (Yes/No): Comments:

07:52-08:05 Cooperation between Theoretical and Practical Education through Power Electronics Circuits
   Taichi Kawakami, Kazuhiro Umetani, Shigeo Morimoto
   Show (Yes/No): Comments:

08:05-08:18 Synchronous learning and teaching in engineering education in response to COVID situations
   Truong Phung
   Show (Yes/No): Comments:
Room D
Saturday, 16 October 2021
07:00 - 08:20

T025 - TT Control System, Robotics and Automation

Chairs: Jingying Li, Yong He

07:00-07:13  **AI Quadruped Robot Assistant for the Visually Impaired**  
  Ajaykumaar Sivacoumare, Sheethal Maria S, Sarga Satheesh, Athul T, Manikandan V, Vinopraba T

Show (Yes/No):  Comments:

07:13-07:26  **Dynamic event-triggered consensus for discrete-time multi-agent systems**  
  Mengshen Chen, Huaicheng Yan, Meng Wang, Zhichen Li

Show (Yes/No):  Comments:

07:26-07:39  **An improved moth-flame optimization algorithm based on fusion mechanism**  
  Luchao Jiang, Kuangrong Hao, Xue-song Tang, Tong Wang, Xiaoyan Liu

Show (Yes/No):  Comments:

07:39-07:52  **Stability Analysis for Delayed Neural Networks Based on A Sufficient And Necessary Condition on Polynomial Inequalities**  
  Fei Long, Yong He

Show (Yes/No):  Comments:

07:52-08:05  **Neural Network Control based Stabilization of Nonlinear Systems in Arbitrary Time**  
  Vijay Kumar Singh, Parijat Prasun, Bhawana Singh, Shyam Kamal, Sandip Ghosh

Show (Yes/No):  Comments:

08:05-08:18  **An Investigation of G-L and R-L Based FOMRAC and Optimal FOPID on Unstable FOPTD Process**  
  Deep Mukherjee, LLoyds Raja, Palash Kundu, Apurba Ghosh

Show (Yes/No):  Comments:
T024 - TT Control System, Robotics and Automation

Chairs: Yukang Cui, Xin Gong

07:00-07:13 Adaptive Super-Twisting Guidance Law with Extended State Observer
Sunil Kumar, Rahul Kumar Sharma, Shyam Kamal
Show (Yes/No): Comments:

07:13-07:26 A Utility Operation Model Design and Analysis of a Massage Robot
Shutong Li
Show (Yes/No): Comments:

07:26-07:39 Path Extraction for Autonomous Mobile Robot Using Skeletonization
Ryuki Higuchi, Yasutaka Fujimoto
Show (Yes/No): Comments:

07:39-07:52 Verification of Coaching effect by Instructor-like Assistance System Based on Model Predictive Constraint Satisfaction
Takuma Yamaguchi, Syota Matsubayashi, Tatsuya Suzuki, Kazuhisa Miwa
Show (Yes/No): Comments:

07:52-08:05 Robust Unknown Input Observer for Uncertain Non-Linear Systems using Sliding Modes with Fault Detection
Bhagyashri Gurjar, Bijnan Bandyopadhyay
Show (Yes/No): Comments:

08:05-08:18 Human-Assisted Grasping for Manipulation of Biological Cells
Jiuyun Li, Quang Minh Ta, Chao Liu, Chien Chern Cheah
Show (Yes/No): Comments:
S122 - SS Advances in Electric Vehicle Charging and Next Generation Wireless Technology

Chairs: Rajesh Gupta, Rajasekar S.

07:00-07:13 Standalone Wind Energy Conversion System for EV Battery Charging and AC Residential Loads
   Zubaida Khan, Rajesh Gupta
   Show (Yes/No): Comments:

   Genki Kengaku, Hideki Omori, Masahito Tsuno, Toshimitsu Morizane, Hidehito Matayoshi
   Show (Yes/No): Comments:

07:26-07:39 Standalone PV based Boost Derived Hybrid Converter for EV Charging Applications
   Gunupuru Govinda Rao, Rajesh Gupta
   Show (Yes/No): Comments:

07:39-07:52 Soft-Switching Based Integrated On-board Charger For Electric Vehicles
   Jyoti Gupta, Rakesh Maurya, Sabha Raj Arya
   Show (Yes/No): Comments:

07:52-08:05 Smart Vehicular System: Demand, Curiosity, Challenges, And Power Electronics Skills
   M.S. Bhaskar, Dhafer Almakhles, P. Sanjeevikumar
   Show (Yes/No): Comments:

08:05-08:18 A Modular Coil Design for High-Power Wireless EV Charging
   Ali Ramezani, Mehdi Narimani
   Show (Yes/No): Comments:
T067 - TT Industrial Automation, Communication, Networking and Informatics

Chairs: Songlin Zhuang, Toshimasa Miyazaki

07:00-07:13 A Genetic Algorithm based Scheduling Method for Automotive Ethernet
Hyeong-jun Kim, Kyoung-chang Lee, Suk Lee
Show (Yes/No): Comments:

07:13-07:26 Identification of Modules from Graphical Control Specification
Santonu Sarkar
Show (Yes/No): Comments:

07:26-07:39 Combinational Optimization Power (COP) - A Practical Power Budgeting Method for Many-cores
Xin Li, Zhi Li, Yaqi Ju, Huajie Lin, Wei Zhou
Show (Yes/No): Comments:

07:39-07:52 Context Aware Compression for Environmental Edge Devices using LPWAN.
Gilad Itzkovitch, Matthew Kuo
Show (Yes/No): Comments:

07:52-08:05 A novel distributed cooperative control approach for islanded microgrids with communication delays
Tao Yang, Xiaoqing Lu
Show (Yes/No): Comments:

08:05-08:18 Continues Sliding-Mode Control Of Robotic Manipulators With Uncertain Control Gain
Haofan Yu, Kemeng Wei, Dong Wang
Show (Yes/No): Comments:
S641 - SS Predictive Maintenance Architectures and Applications for Industrial Systems

Chairs: Luis Lino Ferreira, Barış Bulut

07:00-07:13 LSTM-based Anomaly Detection for Railway Vehicle Air-conditioning Unit using Monitoring Data
Toshihide Yokouchi, Minoru Kondo
Show (Yes/No): Comments:

07:13-07:26 Smart Machine Box with Early Failure Detection for Automatic Tool Changer Subsystem of CNC Machine Tool in the Production Line
Shang-Chih Lin, Shun-Feng Su, Yennun Huang
Show (Yes/No): Comments:

07:26-07:39 Autonomous CPSoS for Cognitive Large Manufacturing Industries
Maria J. Santofimia, Felix J. Villanueva, Julian Caba, Jesus Fernandez-Bermejo, Xavier del Toro, Nirmalie Wiratunga, Juan R. Trapero, Ana Rubio, Claudio Salvadori, Juan C. Lopez
Show (Yes/No): Comments:

07:39-07:52 Flexible Architecture for Data-Driven Predictive Maintenance with Support for Offline and Online Machine Learning Techniques
Alda Canito, Marta Fernandes, João Mourinho, Serkan Tosun, Kamer Kaya, Ayşe Gülen Turupcu, Angel Lagares, Hüseyin Karabulut, Goreti Marreiros
Show (Yes/No): Comments:

07:52-08:05 Predictive Maintenance of home appliances: Estimation of Washing Machine Parameters
Luis Ferreira, André Oliveira, Nuno Teixeira, Jorge Landeck, Baris Bulut, Nuno Morgado, Orlando Sousa
Show (Yes/No): Comments:

08:05-08:18 Automated Pipe Inspection Based on Image Processing
Veysel Yüksel, Yusuf Engin Tetik, Mehmet Yılmaz, Ömer Cahit Özdemir
Show (Yes/No): Comments:
T094 - TT Power Electronics & Energy Conversion

Chairs: Jinxin Liu, Yangang Wang

07:00-07:13 An Improved Voltage Control Strategy Based on Finite-Time Theory for Virtual Synchronous Generator
  Wenlu Cai, Chunshui Du, Qiguo Shi, Guangwei Wang, Aiping Wang, Dezheng Chui
  Show (Yes/No): Comments:

07:13-07:26 An Improved Adaptive Inertia and Damping Combination Control of Virtual Synchronous Generator
  Qiguo Shi, Chunshui Du, Yongchao Sun, Wenlu Cai, Aiping Wang, Dezheng Chui
  Show (Yes/No): Comments:

07:26-07:39 Parasitic Inductance Design for Preventing Oscillatory False Triggering of Parallel-Connected GaN-FETs
  Yusuke Hatakenaka, Kazuhiro Umetani, Masataka Ishihara, Eiji Hiraki, Hiroshi Tadano
  Show (Yes/No): Comments:

07:39-07:52 Substrate Solder Crack Evaluation and Modelling of Power Module under Passive Cycling
  Zhongxu Wang, Yangang Wang, Lee Coulbeck, Xiang Li, Wei Gong
  Show (Yes/No): Comments:

07:52-08:05 Discrete-Model Based Analysis of Flyback Converter Circuit
  Bilal Canol, Ali Bekir Y&amp;#305;ld&amp;#305;z
  Show (Yes/No): Comments:

08:05-08:18 A New PWM Control based on an Optimized Zero Sequence Component injection: Application in a Two-Level Inverter.
  Adrien Bourgeade, Malek Ghanes, Maurice Fadel, Abdelkader Bouarfa, Jean-Pierre Barbot
  Show (Yes/No): Comments:
47th Annual Conference of the IEEE Industrial Electronics Society

Room J

Saturday, 16 October 2021
07:00 - 08:20

S701 - SS Resilient, Sustainable, and Secure Inverter Intensive Power Grids

Chairs: Xiaonan Lu, Bo Chen

07:00-07:13 An PLL-Equivalent Model for Low Frequency Dynamic Analysis of Weak-Grid connected VSC
   Xialin Li, Chen Zhang, Lin Zhu, Pengfei Li, Zhi Wang, Li Guo
   Show (Yes/No): Comments:

07:13-07:26 Reduced-order Modeling and Dynamic Stability Analysis of DC Systems Connected to Weak Grids in DC Voltage Control Timescale
   Pengfei Li, Li Guo, Xialin Li, Chen Zhang, Lin Zhu, Ye Zhang
   Show (Yes/No): Comments:

   Nianzhi Hang, Feng Ye, Zheyuan Cheng, Xianghui Cao, Mo-Yuen Chow
   Show (Yes/No): Comments:

07:39-07:52 Model Reduction for Inverter-Dominated Networked Microgrids with Grid-Forming Inverters
   Yuhua Du, Xiaonan Lu, Dongbo Zhao
   Show (Yes/No): Comments:

07:52-08:05 Photovoltaic (PV) System Levelized Cost of Energy (LCOE) Evaluation with Grid Support Function Valuation and Service Lifetime Estimation
   Shijia Zhao, Yuxi Men, Xiaonan Lu, Dongbo Zhao, Alex Huang
   Show (Yes/No): Comments:

08:05-08:18 Comparative Small-Signal Stability Analysis of Grid-Forming and Grid-Following Inverters in Low-Inertia Power Systems
   Lizhi Ding, Xiaonan Lu, Jin Tan
   Show (Yes/No): Comments:
S511 - SS Modular Power Converters Topologies, Control and Applications

Chairs: Deepak Ronangi, Apparao Dekka

07:00-07:13  A Junction Temperature Balance Control Among Sub-Modules for Modular Multilevel Converter
   Hongqi Ding, Fujun Ma, Rong Han, Liheng Lin, Qianming Xu, Yulin Kuang
   Show (Yes/No):  Comments:

07:13-07:26  Space Vector Modulated Direct Torque Control of an Open-end Winding Induction Motor Drive with Three-Level Inversion
   V. Praveenkumar Kunisetti, Vinay Kumar Thippiripati
   Show (Yes/No):  Comments:

07:26-07:39  Selective Voltage Vector Based Predictive Torque Control of an Open-end Winding Induction Motor Drive with Four-Level Inversion for EVs
   Kunisetti V. Praveenkumar
   Show (Yes/No):  Comments:

07:39-07:52  Modified Multi-output Asymmetric Multi-level Inverter
   Bhabhor Mehulkumar, Baria Virat, Jammala Venkataramanaiah
   Show (Yes/No):  Comments:

07:52-08:05  Fault Limiting Circuit based protection for DC and AC Faults in HB-MMC HVDC Systems
   Sukrashis Sarkar, Anandarup Das
   Show (Yes/No):  Comments:

08:05-08:18  Short Endurance Drive Cycle Analysis of MMC Based Absolute Battery Operated Harbor Vessel
   Vidyasagar Tummakuri, Thanga Raj Chelliah, Deepak Ronangi
   Show (Yes/No):  Comments:
S521 - SS Multilevel Converters Topologies, Control Strategies and Protection

Chairs: Josep Pou, Sreekanth Thamballa

07:00-07:13 Suppression of lower order harmonics by Switched-Capacitive filtering using Polygonal Space Vector Structures and Capacitor Sizing for Induction Motor Drive Applications
   Rahul Dewani, Gopakumar K., Umanand L., Subhashish Bhattacharya
   Show (Yes/No): Comments:

07:13-07:26 Suppression of Lower Order Harmonics using a 21-Concentric 42-sided polygonal Space Vector Structure for Induction Motor Drive Applications
   Rahul Dewani, Gopakumar K., Umanand L., Leopoldo G. Franquelo, Kaushik Rajashekara
   Show (Yes/No): Comments:

07:26-07:39 Battery Fault Tolerance of Modular Multilevel Converter-Based Battery Energy Storage Systems with Redundant Submodules
   Gaowen Liang, Glen G. Farivar, Naga Brahmandra Yadav Gorla, Ezequiel Rodriguez Ramos, Josep Pou
   Show (Yes/No): Comments:

07:39-07:52 Effect of Zero-Sequence Voltage on the Maximum Average Neutral-Point Current Limit of Neutral-Point-Clamped Converters
   Neha Beniwal, Glen G. Farivar, Salvador Ceballos, Naga Brahmandra Yadav Gorla, Josep Pou
   Show (Yes/No): Comments:

07:52-08:05 A MMC Topology with AC Short-Circuit Fault Ride-Through Capability and its Control Strategies
   Chenghao Zhang, Song Tang, Feng Jiang, Min Chen
   Show (Yes/No): Comments:

08:05-08:18 A 24-sided Polygonal Voltage Space Vector Structure for IM drive with Open end winding Configuration
   Prashant Surana, R Rakesh, K Gopakumar, L Umanand
   Show (Yes/No): Comments:
S691 - SS Reliable and Stable Operation of Wind Energy Generation Systems

Chairs: Chao Wu, Meng Huang
07:00-07:13 Transient Stability Enhancement of Inverter-based Resources with Virtual Synchronous Generator on Active Power Control Loop
   Kongyuan Li, Peng Cheng, Limin Jia
   Show (Yes/No): Comments:

07:13-07:26 Impedance Analysis of DFIG System based on DPC without PLL at Fundamental Frequency
   Bin Hu, Heng Nian, Meng Li, Hao Tong, Jun Yang, Hongyu Zhang
   Show (Yes/No): Comments:

07:26-07:39 Comparison of DC-link Voltage Control Schemes on Grid-side and Machine-side for Type-4 Wind Generation System Under Weak Grid
   Liang Huang, Chao Wu, Dao Zhou, Frede Blaabjerg
   Show (Yes/No): Comments:

07:39-07:52 Grid-Following and Grid-Forming Control in Power Electronic Based Power Systems: A Comparative Study
   Xian Gao, Dao Zhou, Amjad Anvari-Moghaddam, Frede Blaabjerg
   Show (Yes/No): Comments:

07:52-08:05 Active Damping Control Strategies for WEC with VSM considering DC-Link Dynamics
   Max Rose, Katharina Günther, Constantinos Sourkounis
   Show (Yes/No): Comments:

08:05-08:18 Novel control compatible distance protection in the outgoing line of type-4 wind power plants
   Kaiqi Ma, Zhe Chen, Claus Leth Bak
   Show (Yes/No): Comments:
47th Annual Conference of the IEEE Industrial Electronics Society

Room N
Saturday, 16 October 2021
07:00 - 08:20

S181 - SS An Interdisciplinary Approaches and Advances in Grid Interfaced Transportation System

Chairs: Anup Kumar Panda, Man Mohan Garg

07:00-07:13  An Antlion Optimization technique based Hybrid Series APF for Harmonic Mitigation
Arjun Baliyan, Nitisha Shrivastava, Sayed Javed Alam
Show (Yes/No): Comments:

07:13-07:26  Normalized Gaussian Kernel LMS controlled Grid interactive PV based EV Charging Station
Prerana Mohapatra, Venkata Ramana Naik N, Anup Kumar Panda, Nishit Tiwary
Show (Yes/No): Comments:

07:26-07:39  Design and Hardware Realization of an Asymmetrical Fuzzy Logic-based MPPT Control for Photovoltaic Applications
Claude Bertin Nzoundja Fapi, Patrice Wira, Martin Kamta, Bruno Colicchio
Show (Yes/No): Comments:

07:39-07:52  A Cascaded Pseudo Open Loop Synchronization Technique for Grid Connected Application
Ahmed Safa, Zakaria Chedjara, Abdelmadjid Gouichiche, Youcef Messlem, El Madjid Berkouk, Patrice Wira
Show (Yes/No): Comments:

07:52-08:05  Distribution Factor Assessment for PEVs Charging Stations with V2G Capability in Power Systems
Nasim Rashidirad, Hanane Dagdougui
Show (Yes/No): Comments:

08:05-08:18  Application of VSG Control in Microgrids with Unknown Frequency Dynamic of Diesel Generator
Xialin Li, Xunyang Wang, Li Guo, Rui Liu, Hongda Wang, Jianchun Xing
Show (Yes/No): Comments:
S231 - SS DCDC Converter Topologies and their Intelligent Control for Energy Storage Systems

Chairs: Varsha A. Shah, Sachin Jain
07:00-07:13 Component Based and Machine Learning Aided Optimal Filter Design for Full-Bridge Current doubler Rectifier
   GuiHua Liu, YanBo Chen, Yuan Gao, JiaNing Zhu, BoXin Wang, Tao Yang
   Show (Yes/No): Comments:

07:13-07:26 Exploring various topology using DC-DC converter in hybrid energy storage system for electric vehicles
   Vima Mali, Brijesh Tripathi
   Show (Yes/No): Comments:

07:26-07:39 Ultracapacitor Based Voltage Lift Converter with PID Controller as a Function of Current
   Ujjval B Vyas, Varsha A Shah, Athul Vijay P K
   Show (Yes/No): Comments:

07:39-07:52 Analysis on Resonant Converter for Ultracapacitor Charging by Considering Terminal Voltage of Ultracapacitor as State Space Variable
   Athul Vijay P K, Varsha A Shah, Ujjval B Vyas
   Show (Yes/No): Comments:

07:52-08:05 Analyses and Design of a High Power Bidirectional 48V-12V DCDC Converter System for Electric Vehicle Application
   Hai Liu, Lenian He
   Show (Yes/No): Comments:

08:05-08:18 A Comparative Study of Energy Storage Systems based on Modular Multilevel Converters
   Fernando Davalos Hernandez, Federico Ibanez, Rahim Samanbakhsh, Ramiro Velazquez
   Show (Yes/No): Comments:
S611 - SS Power Electronics for Energy Access and OffGrid Systems

Chairs: Venkatesh Boddapati, Ramjee Prasad

07:00-07:13 Series Arc Fault Detection in Low Voltage Distribution System with Signal Processing and Machine Learning Approach
Arvind Kumar Gupta, Aurobinda Routray, VN Achutha Naikan
Show (Yes/No): Comments:

Nethravathi S, Venkatakirthiga M
Show (Yes/No): Comments:

07:26-07:39 Active Distribution System Protection Using High-frequency component analysis by DWT-MRA
Jnaneswar Kolli, Ankur Singh Rana, Mini Shaji Thomas
Show (Yes/No): Comments:

07:39-07:52 A bidirectional converter control design to improve the performance of isolated microgrid
Hercules Oliveira, Luiz Ribeiro, Jose De Matos, Joao Caracas, Guilherme Farias, Osvaldo Saavedra, Lucas Pinheiro
Show (Yes/No): Comments:

07:52-08:05 A Novel Four-port LLC Converter for Dual PV and Battery Integration
Sumana Ghosh, Md Safayatullah, Mohamed Elrais, Issa Batarseh
Show (Yes/No): Comments:
Room Q
Saturday, 16 October 2021
07:00 - 08:20

S111 - SS Advances in DataDriven Process Monitoring and Control for Complex Industrial Systems

Chairs: Hao Luo, Zhiwen Chen
07:00-07:13  Incident early warning based on sparse autoencoder and decision fusion for drilling process
             Zheng Zhang, Xuzhi Lai, Min Wu, Sheng Du
             Show (Yes/No):  Comments:

07:13-07:26  Fruit Maturity Recognition from Agricultural, Market and Automation Perspectives
             Koteswar Rao Jerripothula, Sarvesh Kumar Shukla, Samyak Jain, Shudhanshu Singh
             Show (Yes/No):  Comments:

07:26-07:39  Data-driven Wasserstein distributionally robust optimization for refinery planning under uncertainty
             Jinmin Zhao, Liang Zhao, Wangli He
             Show (Yes/No):  Comments:

07:39-07:52  Data-driven Quality Estimation for Production Processes with Lot-level Quality Control
             Naveen John Punnoose, Prahlad Vadakkepat, Ai Poh Loh, Edward Yapp Kien Yee
             Show (Yes/No):  Comments:

07:52-08:05  Design of a Database-Driven Nonlinear Generalized Predictive Controller
             Zhe Guan, Tomofumi Okada, Toru Yamamoto
             Show (Yes/No):  Comments:

08:05-08:18  Quality monitoring for injection moulding process using semi-supervised learning approach
             Nam Doan, Tung Tran Van, Edward Yapp Kien Yee
             Show (Yes/No):  Comments:
S462 - SS Model Predictive Control for Power Converters

Chairs: Fadia SEBAALY, Jose Rodriguez

07:00-07:13 Design of a Database-Driven Model Predictive Control System for Excavator-Environment Interaction
   Tomofumi Okada, Toru Yamamoto, Takayuki Doi, Kazushige Koiwai, Koji Yamashita
   Show (Yes/No): Comments:

07:13-07:26 Model Predictive Current Control of PMSM Drives for Achieving both Fast Transient Response and Ripple Suppression
   Hiroaki Kawai, Julien Cordier, Ralph Kennel, Shinji Doki
   Show (Yes/No): Comments:

07:26-07:39 Event-Triggered Continuous Control Set-Model Predictive Control for Three-Phase Power Converters
   Hao Lin, Jianxing Liu, Xiaoning Shen, Yunfei Yin, Jose Ignacio Leon, Leopoldo Garcia Franquelo, Ligang Wu
   Show (Yes/No): Comments:

07:39-07:52 Switched-Capacitor Two-Output Multilevel Inverter (SCMLI) with Common Ground for Photovoltaic Applications
   Zhiyuan Xu, Jia Yao, Adrian Ioinovici
   Show (Yes/No): Comments:

07:52-08:05 Automatic Generation of Attack Strategy for Multiple Vulnerabilities Based on Domain Knowledge Graph
   Xiaosheng Chen, Wendi Shen, Genke Yang
   Show (Yes/No): Comments:
47th Annual Conference of the IEEE Industrial Electronics Society

Plenary & Keynote

Saturday, 16 October 2021
08:30 - 09:30

Special lecture by IES TC Cluster-3
47th Annual Conference of the IEEE Industrial Electronics Society

Room C
Saturday, 16 October 2021
10:00 - 11:10

ICE3 - ICELIE

Chairs: Primož Podržaj, Salma Alarefi

10:00-10:13 Student Journey Map (SJM): a scenario-based approach to professionalizing digital education
Emmanuel Fragnierie, Camille Pellaton, Randolf Ramseyer, Maria Sokhn, Charline Unternährer
Show (Yes/No): Comments:

10:13-10:26 E-Teaching High Accuracy Motion Control Techniques in Covid-19 time
Roberto Oboe, Giulia Michieletto
Show (Yes/No): Comments:

10:26-10:39 Blended Learning for Remote Software Simulation Laboratory of a Solar Power System
Salma M S Al Arefi
Show (Yes/No): Comments:

10:39-10:52 An Erasmus+ project: Interactive Course for Control Theory (ICCT)
Show (Yes/No): Comments:

10:52-11:05 Internet Technologies in Academic Remote Teaching: Case Study of Numerical Methods
Jerzy Baranowski, Waldemar Bauer, Katarzyna Grobler-D, Katarzyna Grobler-D
Show (Yes/No): Comments:
T049 - TT Electrical Machines and Drives

Chairs: Qingsong Wang, Xing Zhao

10:00-10:13  Induction Motor Parameters Identification in Noisy Environment
    Jean Sawma, Flavia Khatounian, Eric Monmasson, Ragi Ghosn
    Show (Yes/No):  Comments:

10:13-10:26  Detection of balls bearing Incipient defect by current analysis
    Mahamad Hassan Gaditto, Vocom Bruno, Yazidi Amine, Henao Humberto, Segard Eric
    Show (Yes/No):  Comments:

10:26-10:39  Investigation of Resistivity Impact on AC Losses in Hairpin Conductors
    Marco Pastura, Stefano Nuzzo, Davide Barater, Giovanni Franceschini
    Show (Yes/No):  Comments:

10:39-10:52  Sustainability Aspects of Electrical Machines For E-Mobility Applications Part I: A Design with Reduced Rare-earth Elements
    Bharadwaj Raghuraman, Shafigh Nategh, Nikitas Sidiropoulos, Linnea Petersson, Aldo Boglietti
    Show (Yes/No):  Comments:

10:52-11:05  Detection of Inturn Short-Circuits of E-Bike BLDC motor
    Zdenek Frank, Jan Laksar
    Show (Yes/No):  Comments:
Room B
Saturday, 16 October 2021
10:00 - 11:20

S022 - SS Advanced Control of Grid Connected Converters for Distributed Generation and Power Quality

Chairs: Hadi Y. KANAAN, Hasan KOMURCUGIL
10:00-10:13 Stability Enhancement for Single-Loop Voltage Controlled Voltage-Source Converters with LC-Filter
    Ziqi Zhou, Sante Pugliese, Marco Liserre
    Show (Yes/No): Comments:

10:13-10:26 Single-stage PV System With Multi-Objective Predictive Control Approach
    Simone Vanti, Prabhat Ranjan Bana, Mohammad Amin
    Show (Yes/No): Comments:

10:26-10:39 Model-Free Predictive Control of Grid Connected Converters with No System Parameters
    Alireza Jabbarnejad, Sadegh Vaez-Zadeh, Jose Rodriguez
    Show (Yes/No): Comments:

10:39-10:52 Set Invariance Based Localization of Kalman Filter Estimation Error in Automatic Generation Control
    Dorijan Leko, Mario Vašak
    Show (Yes/No): Comments:

10:52-11:05 Avoiding Circulating Current via Current-Limiting Control in AC Microgrids with Parallel Three-Phase Inverters
    Seyfullah Dedeoglu, George C. Konstantopoulos
    Show (Yes/No): Comments:

11:05-11:18 A New Arm Voltage Control Scheme for a Single Phase Modular Multilevel Converter
    Anthony Abdayem, Jean Sawma, Flavia Khatounian, Eric Monmasson, Ragi Ghosn
    Show (Yes/No): Comments:
47th Annual Conference of the IEEE Industrial Electronics Society

Room D

Saturday, 16 October 2021
10:00 - 11:20

INTEROP4 - IEEE 1451 Centers of Expertise (CoE)

P1451.001-2017, Gustavo Monte
P1451.002, Antonio Espirito-Santo
P1451.1.5, Jun Wu
P1451.1.6, Hiroaki Nishi
OPEN DISCUSSIONS
Chairs: Victor Huang, Kang Lee
T029 - TT Control System, Robotics and Automation

Chairs: Hao Luo, Zhiwen Chen

10:00-10:13 Towards Modeling and Control of a Crane-Collaboration for the Automated Assembly of Timber Structures
Mark Burkhardt, Oliver Sawodny
Show (Yes/No): Comments:

10:13-10:26 Adaptive Backstepping Control of Antilock Braking System Based on LuGre Model
Jamal El-bakkouri, Hamid Ouadi, Abdallah Saad
Show (Yes/No): Comments:

10:26-10:39 An International Case Study on Control Software Development in Large-Scale Plant Manufacturing Companies of One Industrial Sector at Different Locations
Birgit Vogel-Heuser, Eva-Maria Neumann, Alois Zoitl, Antonio M. Gutierrez Fernandez, Rick Rabiser, Hafiyyan Sayyid Fadhillah
Show (Yes/No): Comments:

10:39-10:52 Smooth Visual-Coverage Path Planning for Escort Missions using UAVs
Kaouther Moussa, Hilton Tnunay, Ahmad Hably, Nicolas Marchand
Show (Yes/No): Comments:

10:52-11:05 Predictive control of PMSM using improved model of the drive
Ondrej Suchy, Stepan Janous, Jakub Talla, Zdenek Peroutka
Show (Yes/No): Comments:

11:05-11:18 Mobile robot localization in industrial environments using a ring of cameras and ArUco markers
Sara Roos-Hoefgeest Toribio, Ignacio Álvarez García, Rafael C. González de Los Reyes
Show (Yes/No): Comments:
T0210 - TT Control System, Robotics and Automation

Chairs: Yunsong Xu, Okyay Kaynak

10:00-10:13 Data-driven framework to improve collaborative human-robot flexible manufacturing applications
   *Fiorella Sibona, Marina Indri*
   Show (Yes/No): Comments:

   *Henrique Fagundes Gasparoto, Olivier Chocron, Jean-Matthieu Bourgeot, Mohamed Benbouzid, Pablo Siqueira Meirelles*
   Show (Yes/No): Comments:

10:26-10:39 Implementation of an autonomous ROS-Based Mobile Robot with AI depth estimation
   *João Faria, António Moreira*
   Show (Yes/No): Comments:

10:39-10:52 Non-Invasive Closed-Loop System Identification of an Active Rectifier
   *Raoul Laribi, Darian Andreas Schaab, Yijun Lu, Alexander Sauer*
   Show (Yes/No): Comments:

10:52-11:05 Disturbance Observer Based Fault Tolerant Control of a Quadrotor Helicopter
   *Yarkin Hocaoglu, Mehmet Emin Mumcuoglu, Mustafa Unel*
   Show (Yes/No): Comments:

11:05-11:18 Robust two-degree-of freedom control optimally balancing feedforward plant inversion and feedforward closed loop inversion
   *Valentina Orsini, Leopoldo Jetto*
   Show (Yes/No): Comments:
S112 - SS Advances in DataDriven Process Monitoring and Control for Complex Industrial Systems

Chairs: Hao Luo, Yunsong Xu

10:00-10:13 Generating Pool of Classifiers with Hyper-Parameter Optimization for Ensemble
Qiushi Wang, Hian Leng Chan
Show (Yes/No):  Comments:

10:13-10:26 Vibration Analysis of a Wind Turbine Gearbox for Off-cloud Health Monitoring through Neuromorphic-computing
Pouya Soltani Zarrin, Cristian Martin, Peter Langendoerfer, Christian Wenger, Manuel Diaz
Show (Yes/No):  Comments:

10:26-10:39 A Data-Driven Method for Paint Curing Quality Control in Automotive Industry
GöKalp Ayaz, ÜrÜResin
Show (Yes/No):  Comments:

10:39-10:52 Performance Evaluation of a De-oiling Process Controlled by PID, H∞ and MPC
Stefan Jespersen, Zhenyu Yang
Show (Yes/No):  Comments:

10:52-11:05 Optimal robotic controller based on signals and data information with kinematic redundancy
Yair Casas, Chidentree Treesatayapun
Show (Yes/No):  Comments:

11:05-11:18 A Proposal to Mitigate Similarity Bias for the Paderborn Bearing Data Set
Lucio Venturim, Francisco de Assis Boldt
Show (Yes/No):  Comments:
S281 - SS Efficient and Sustainable LED Lighting Systems

Chairs: Fernando Bento, Pascal Dupuis

10:00-10:13 Cost Efficient Power Electronic Led Headlamp for automotive
Lalit Ahuja, Anshul Tyagi, Anagha Titpude, Arti Tare
Show (Yes/No): Comments:

10:13-10:26 A Single-Inductor Multiple Current Output RGB LED Driver Architecture with Hybrid Dimming for Large-Scale Facilities
Joao Dinis, Fernando Bento, Antonio J. Marques Cardoso
Show (Yes/No): Comments:

10:26-10:39 Current crowding as a major cause for InGaN LED degradation at extreme high current density
Nicola Trivellin, Matteo Buffolo, Carlo De Santi, Enrico Zanoni, Gaudenzio Meneghesso, Matteo Meneghini
Show (Yes/No): Comments:

10:39-10:52 High Efficiency Bus Provider for VLC Applications Based an Asymmetrical Half Bridge Converter with a Resonant DCX Auxiliary Output
Theyllor Oliveira, Manuel Arias, Diego Lamar, Daniel Aller, Abraham López
Show (Yes/No): Comments:

10:52-11:05 Traffic Intensity Adaptive Street Lighting Control
Ansis Avotins, Olegs Tetervenoks, Leslie Robert Adrian, Aivars Severdaks
Show (Yes/No): Comments:

11:05-11:18 Sensor Calibration for LED Supplemental Lighting in Horticulture
Afagh Mohaghheghi, Mehrdad Moallem
Show (Yes/No): Comments:
47th Annual Conference of the IEEE Industrial Electronics Society

Room I
Saturday, 16 October 2021
10:00 - 11:20

T098 - TT Power Electronics & Energy Conversion

Chairs: Samir Kouro, Sertac Bayhan
10:00-10:13 A Novel Boost-Based Quasi Resonant DC-DC Converter with Low Component Count for Stand-Alone PV Applications
   Pouyan Pourhadi Abkenar, Alinaghi Marzoughi, Sadegh Vaez-Zadeh, Hossein Iman-Eini, Mohammad Hamed Samimi, Jose Rodriguez
   Show (Yes/No): Comments:

10:13-10:26 Predictive Voltage Control for Grid-Forming Power Converters with Virtual Output Impedance
   Johnny Chhor, Benedikt Lammersmann
   Show (Yes/No): Comments:

10:26-10:39 Multilevel Inverter with a New Modulation Method Applied to Solid-State Transformer in PV Applications
   Hesamodin Abdoli, Javad Shokrollahi Moghani, Sadegh Vaez-Zadeh, Amir Babaki, Alireza Jafari Natanzi, Jose Rodriguez
   Show (Yes/No): Comments:

   Amel Lachichi, Phil Mawby
   Show (Yes/No): Comments:

10:52-11:05 Performance Evaluation of Multi-Step Exhaustive Search Finite Control Set Model Predictive Control for Multi-Level Voltage Source Converter
   Benedikt Lammersmann, Johnny Chhor, Constantinos Sourkounis
   Show (Yes/No): Comments:

11:05-11:18 A Novel asymmetric multilevel inverter topology based on PEC9 using a hybrid PWM modulation
   Mohammadali Ahmadijokani, Mohammad Sharifzadeh, Shayan Pourfarokh, Majid Mehrasa, Kamal Al-Haddad
   Show (Yes/No): Comments:
T133 - TT TT Renewable Energy Systems and Smart Grid

Chairs: Fernando Lezama, Mo-Yuen Chow

10:00-10:13 Imbalance Reduction by Risk Filter for Operating Flexible DER under Forecast Uncertainties
   Marvin Schlageter, Juri Backes, Wolfgang Renz
   Show (Yes/No): Comments:

10:13-10:26 Probabilistic DAM price forecasting using a combined Quantile Regression Deep Neural Network with less-crossing quantiles
   Ties van der Heijden, Peter Palensky, Edo Abraham
   Show (Yes/No): Comments:

10:26-10:39 Vertical Axis Wind Turbine Performance Based on Rotor Blade Radius
   Edvins Mineikis, Janis Zakis, Alexander Suzdalenko
   Show (Yes/No): Comments:

10:39-10:52 Low-power Hybrid Energy Harvesting System Based on the Joint Operation of Glucose Biofuel Cells and Thermoelectric Generator
   Daria Gazizova, Aleksei Shcherbak, Pavel Gotovtsev, Yulia Parunova, Sergei Vostrikov, Andrey Somov
   Show (Yes/No): Comments:

10:52-11:05 Fractional-Order Adaptive Fuzzy Super Twisting Sliding Mode Controller for Permanent Magnet Synchronous Generators
   Nawal Ferhat, Tarek Aounallah, Najib Essounbouli, Farid Bouchafaa, Abdelaziz Hamzaoui
   Show (Yes/No): Comments:

11:05-11:18 Control Algorithm for Energy Storage Integration with an Open-Winding Wind Turbine Generator
   Mehanathan Pathmanathan, Peter Lehn
   Show (Yes/No): Comments:
47th Annual Conference of the IEEE Industrial Electronics Society

Room K

Saturday, 16 October 2021
10:00 - 11:20

S512 - SS Modular Power Converters
Topologies, Control and Applications

Chairs: Deepak Ronanki, Thanga Raj Chelliah

10:00-10:13  MMCC Based Decoupled Control of PMSG for Small Scale Hydro Power Plants
  Rakesh Roy, Amit Kumar, Abhinav Kumar, Anindita Jamatia, Prabir Ranjan Kasari, Bikram Das, Abanishwar Chakrabarti
  Show (Yes/No):  Comments:

  Vadher Chandrakant Pravinbhai, Deepak Ronanki, Thanga Raj Chelliah
  Show (Yes/No):  Comments:

10:26-10:39  DC-Side Impedance Interaction Analysis in an MMC-Based Back-to-Back VSC-HVDC System
  Mehrdad Nahalparvari, Mohsen Asoodar, Staffan Norrga, Hans-Peter Nee
  Show (Yes/No):  Comments:

10:39-10:52  Combination of Backstepping and Reduced Indirect FCS-MPC for Modular Multilevel Converters
  Saad Hamayoon, Morten Hovd, Jon Are Suul
  Show (Yes/No):  Comments:

10:52-11:05  Trapezoidal operation of modular multilevel DC-DC converter for HVDC interconnections
  Beeond M. Saleh, Felipe Donoso, Alessandro Costabeber, Alan J. Watson, Jon C. Clare
  Show (Yes/No):  Comments:

11:05-11:18  Modular-Matrix-Converter-Based Smart Transformer for Hybrid Microgrid
  Lijun Zhang, Alexandre Bento, Guilherme Paraíso, Pedro Costa, Sonia Pinto, José Fernando Silva
  Show (Yes/No):  Comments:
Room L
Saturday, 16 October 2021
10:00 - 11:20

S522 - SS Multilevel Converters Topologies, Control Strategies and Protection

Chairs: Josep Pou, Naga Braharendra Gorla
10:00-10:13 Validation of an Extended Loss-Optimised Branch Energy Control for Modular Multilevel Converters under Unbalanced Grid Conditions
   Rebecca Dierks, Axel Mertens
   Show (Yes/No): Comments:

10:13-10:26 A Review on Artificial Intelligence Based Strategies for Open-Circuit Switch Fault Detection in Multilevel Inverters
   Bushra Masri, Hiba Al Sheikh, Nabil Karami, Hadi Y. Kanaan, Nazih Moubayed
   Show (Yes/No): Comments:

10:26-10:39 SDBC-MMC STATCOM Control Under Unbalanced Grid Conditions Based on Different Sequence Extraction Methods
   Ahmed Meligy, Taoufik Qoria, Waqas Ali, Ilknur Colak
   Show (Yes/No): Comments:

   Vishal K A Kushalappa, Ibrahim Elsabrouty, Waqas Ali, Ilknur Colak
   Show (Yes/No): Comments:

10:52-11:05 Application of Resonant Controllers for Current Harmonic Suppression and Rejection in Grid-Tied Modular Multilevel Converters
   Amandus Bach, Raúl Santiago Muñoz Aguilar, Ilknur Colak
   Show (Yes/No): Comments:

11:05-11:18 Analysis, Modeling, and Simulation of the Multiple Output Flyback Converter used in Various Motor Drive Applications
   Oguz Tahmaz, Ali Bekir Y#305;ld&#305;z
   Show (Yes/No): Comments:
S491 - SS Modeling, Management and Control of Energy Storage and Hybrid Energy Storage Systems for Transportation Electrification

Chairs: Mario Porru, Alexandre Ravey

10:00-10:13 Optimization of Hybrid Energy Management for HTE Vehicles
   El Aoumari Abdelaziz, Ouadi Hamid
   Show (Yes/No): Comments:

10:13-10:26 Design of all-direction Misalignment tolerant magnetic interface suitable for Dynamic wireless power transfer systems
   Alireza Jafari Natanzi, Sadegh Vaez-Zadeh, Amir Babaki, Sina Navaiyan-Kalat, Jose Rodriguez
   Show (Yes/No): Comments:

10:26-10:39 Experimental based Aging Model for Automotive Li-Ion Batteries
   Lorenzo Milanesi, Matthias K. Scharrer, Davide Barater
   Show (Yes/No): Comments:

10:39-10:52 A flexible Multi-Active Half-Bridge converter for active balancing of series-connected Li-Ion cells
   Andrea Zilio, Paolo Mattavelli
   Show (Yes/No): Comments:

   Mohsen Banaei, Jalil Boudjadar, Razgar Ebrahimy, Henrik Madsen
   Show (Yes/No): Comments:

   Alfonso Damiano, Nicola Campagna, Vincenzo Castiglia, Luigi Pio Di Noia, Rosario Miceli, Antonino Oscar Di Tommaso
   Show (Yes/No): Comments:
S591 - SS Power Electronics and Energy Management for Renewables, Stationary Storage and Electric Transportation

Chairs: Andrei Blinov, Sertac Bayhan

10:00-10:13 Operation and Design of Series-Resonant Current-Source Full-Bridge DC-DC Converter
   Ievgen Verbytskyi, Andrei Blinov, Dmitri Vinnikov, Dimosthenis Peftitis
   Show (Yes/No): Comments:

10:13-10:26 Battery Charging System with Three-level ANPC Converter Operating at Variable Bipolar DC-link
   Michał Harasimczuk, Krzysztof Kalinowski, Jacek Rąbkowski
   Show (Yes/No): Comments:

   Ali Husnain, Abdullahi Bamigbade, Hamad AlBeshr, Tareg Ghaoud
   Show (Yes/No): Comments:

10:39-10:52 An efficient control strategy for the hybrid wind-battery system to improve battery performance and lifetime
   Mehrdad Gholami, Majid Mehrasa, Reza Razi, Ahmad Hably, Seddik Bacha, Antoine Labbone
   Show (Yes/No): Comments:

10:52-11:05 Modelling of Voltage Distribution within Hairpin Windings
   Eraldo Preci, Stefano Nuzzo, Davide Barater, Michele Degano, Giampaolo Buticchi, David Gerada, Chris Gerada
   Show (Yes/No): Comments:

11:05-11:18 Impact of PWM Waveforms on Partial Discharge in SiC-Based Motor Drives
   Mohamed Diab, Wenzhi Zhou, Christopher Emersic, Xibo Yuan, Ian Cotton
   Show (Yes/No): Comments:
ICELIE 2021 Closing session
47th Annual Conference of the IEEE Industrial Electronics Society

Room A

Saturday, 16 October 2021
11:30 - 12:50

S081 - SS Advanced Topologies and Control Methods for Multiport Power Converters

Chairs: Mokhtar Aly, Samir Kouro

   Syed Rahman, Jonathan Ghering, Irfan Khan, Mohd Tariq, Akhtar Kalam, Atif Iqbal
   Show (Yes/No): Comments:

11:43-11:56 General Approach to Synthesize Multi-Port Power Converters for Hybrid Energy Systems
   Sina Vahid, Ayman EL-Refaie
   Show (Yes/No): Comments:

11:56-12:09 A Five-Level Common Grounded Boost Inverter Topology with Model Predictive Control For Grid-Tied Photovoltaic Generation
   Mokhtar Aly, Samir Kouro, Emad M. Ahmed, Thierry A. Meynard, Jose Rodriguez
   Show (Yes/No): Comments:

12:09-12:22 Model Predictive Control-Based Three-Port Common Ground Photovoltaic-Battery Grid-Connected Inverter
   Mokhtar Aly, Eltaib Abdeen D. Ibrahim, Samir Kouro, Emad M. Ahmed, Thierry A. Meynard, Jose Rodriguez
   Show (Yes/No): Comments:

12:22-12:35 Integrated Multiport Bidirectional DC-DC Converter for HEV/FCV Applications
   Bang Nguyen, Honnyong Cha, Tuyen Vu, Thai-Thanh Nguyen
   Show (Yes/No): Comments:

12:35-12:48 Control of cross-circulating currents in a MMC with parallel connected arms in Solid State Transformers
   Felipe Ruiz, Marcelo Perez, Freddy Flores-Bahamonde, Mariusz Malinowski
   Show (Yes/No): Comments:
47th Annual Conference of the IEEE Industrial Electronics Society

Room B
Saturday, 16 October 2021
11:30 - 12:50

**S023 - SS Advanced Control of GridConnected Converters for Distributed Generation and Power Quality**

Chairs: Hadi Y. KANAAN, Hasan KOMURCUGIL

11:30-11:43  **DC Stage Modelling for LVRT Capability in Photovoltaic Systems**
   *David Javier Rincon Adarme, Maria Alejandra Mantilla Villalobos, Juan Manuel Rey Lopez, Miguel Andres Garnica Lopez*
   Show (Yes/No): Comments:

11:43-11:56  **An Equivalent Model of the Paralleled Modular ANPC Converter with a Decoupled DC Link for Real-Time Simulation**
   *Kevin-Rafael Sorto-Ventura, Wei Li, Kamal Al-Haddad*
   Show (Yes/No): Comments:

11:56-12:09  **PV Injection System with Third Harmonic Compensation based on H-Bridge Topologies**
   *Miguel Albornoz, Jaime Rohten, Jose Espinoza, Marcos Andreu, Alejandra Cuevas, Adrian Torres*
   Show (Yes/No): Comments:

12:09-12:22  **Power Control of a Three-phase Grid-connected Inverter using a Proportional-Resonant Control Method under Unbalanced Conditions**
   *Mohammad Alathamneh, Xingyu Yang, R. M. Nelms*
   Show (Yes/No): Comments:

12:22-12:35  **Power Control of a Three-phase Grid-connected Inverter using a Time-Domain Symmetrical Components Extraction Method under Unbalanced Conditions**
   *Mohammad Alathamneh, Xingyu Yang, R. M. Nelms, Saad Al-Gahtani*
   Show (Yes/No): Comments:

12:35-12:48  **Battery Sources Power Balancing in a Cascaded Multilevel Inverter via an Optimal Moving Horizon Predictive Control**
   *Hassan Althuwaini, Mohammad B. Shadmand*
   Show (Yes/No): Comments:
S092 - SS Advanced signal and image processing techniques for condition monitoring of Electric Machines and Drives

Chairs: Jose A Antonino-Daviu, Hubert Razik

11:30-11:43 Application of Stray Flux Analysis for Rotor Fault Detection in Soft-Started Induction Motors
   Angela Navarro-Navarro, Vicente Biot-Monterde, Jose A. Antonino-Daviu
   Show (Yes/No): Comments:

11:43-11:56 A non-intrusive method for sparking assessment in brush dc-motors based on wavelet analysis
   Pablo Marino Velasco Pla, Jose Antonino-Daviu
   Show (Yes/No): Comments:

11:56-12:09 A comparison of envelope and statistical analyses for bearing diagnosis in hot steel rolling mill lines
   Kisan Sarda, Antonio Acernese, Luigi Russo, Mirko Mazzoleni
   Show (Yes/No): Comments:

12:09-12:22 Hilbert Marginal Spectrum for Failure Mode Diagnosis of Rotating Machines
   Eoghan T. Chelmiah, Darren F. Kavanagh
   Show (Yes/No): Comments:

12:22-12:35 Infrared thermography image processing for the electromechanical fault detection on the kinematic chain
   Alvaro I Alvarado-Hernandez, Israel Zamudio-Ramirez, Jose A Antonino-Daviu, Roque A Osornio-Rios
   Show (Yes/No): Comments:

12:35-12:48 A Robust Self-Commissioning Techniques for Identification of the VSI Nonlinearity Effect in IPMSM Drives
   Sumedh Dhale, Babak Nahid-Mobarakeh, Ali Emadi
   Show (Yes/No): Comments:
47th Annual Conference of the IEEE Industrial Electronics Society

Room D

Saturday, 16 October 2021
11:30 - 12:50

TUT09 - Electric Machines and Drives Fault Diagnosis/Prognosis and Fault-Resilient Control

Presenters
Mohamed Benbouzid
Professor
University of Brest, CNRS, IRDL, France

Demba Diallo
Professor
University of Paris-Saclay, CNRS, GeePs, France
Room E
Saturday, 16 October 2021
11:30 - 12:50

TUT10 - Power Conversion, Modulation and Control of Multiple Three-Phase Permanent-Magnet Motor Drive Systems

Presenters
Prof. Zheng Wang
Professor
School of Electrical Engineering, Southeast University, China

Dr. Xueqing Wang
Associate Research Fellow
Sichuan University, China
TUT11 - Advances and Trends in Cascaded H-bridge Multilevel Converters for MV Grid Applications

Presenters
Prof. Josep Pou
Professor
Nanyang Technological University, Singapore

Dr. Frans Dijkhuizen
Hitachi ABB Power Grids, Sweden

Dr. Glen G Farivar
Post-doc
Nanyang Technological University, Singapore

Dr. Naga Brahmandra
Post-doc
Nanyang Technological University, Singapore
Room G

Saturday, 16 October 2021
11:30 - 12:50

TUT12 - Key Technologies and Latest Advancements of Simultaneous Wireless Power and Data Transfer

Presenters
Prof. Yijie Wang
Professor
Harbin Institute of Technology, China

Dr. Yousu Yao
Associate Professor
Harbin Institute of Technology, China

Prof. Dianguo Xu
Professor
Harbin Institute of Technology, China
47th Annual Conference of the IEEE Industrial Electronics Society

Room H

Saturday, 16 October 2021
11:30 - 12:50

TUT13 - A review and ultimate solution for inductor current estimation in power converters

Presenter
Dorin O. Neacșu
Associate Professor
Applied Electronics Department
Technical University Of Iasi, Romania
47th Annual Conference of the IEEE Industrial Electronics Society

Room I
Saturday, 16 October 2021
11:30 - 12:50

T0912 - TT Power Electronics & Energy Conversion

Chairs: Bhim Singh, Saeed Arazm

11:30-11:43 PSO-Based Performance Optimization Procedure for Current-Controlled Switched Reluctance Generators in Wind Power Applications
   Filipe Pinarello Scalcon, Rodrigo Padilha Vieira, Hilton Abílio Gründling
   Show (Yes/No): Comments:

11:43-11:56 Decoupled Power Flow Control based Phase Modulated Triple Active Bridge DC-DC Converter
   Ashwin Chandwani, Ayan Mallik, Arunachala Mada Kannan
   Show (Yes/No): Comments:

11:56-12:09 A Comprehensive Design Procedure and Performance Evaluation of 200°C Non-Inverting Buck-Boost Converter using SiC MOSFET Bare Dies
   Saikat Dey, Ayan Mallik, Neil Goldsman
   Show (Yes/No): Comments:

   Sina Vahid, Armin Ebrahimian, Nathan Weise, Ayman EL-Refaie
   Show (Yes/No): Comments:

12:22-12:35 Static and Dynamic Characterization of 1200 V SiC MOSFETs at Room and Cryogenic Temperatures
   Mahmoud Mehrabankhomartash, Shiyuan Yin, Alfonso Cruz, Lukas Graber, Maryam Saeedifard, Simon Evans, Florian Kapaun, Ivan Revel, Gerhard Steiner, Ludovic Ybanez
   Show (Yes/No): Comments:

   Matthew Bakalian, John Lam
   Show (Yes/No): Comments:
T135 - TT TT Renewable Energy Systems and Smart Grid

Chairs: Hani Vahedi, Abdelhamid Hamadi

11:30-11:43 Partial power differential-mode inverter for photovoltaic microinverter applications
Diana Lopez, Nicolas Muller, Hugues Renaudineau, Samir Kouro, Jose Rodriguez
Show (Yes/No): Comments:

11:43-11:56 Modeling of Direct-Drive Point Absorber Wave Energy Converters
Cesar Branco, Luiz Ribeiro, Jose Matos, Hugo Mendonca, Osvaldo Saavedra, Hercules Oliveira
Show (Yes/No): Comments:

11:56-12:09 Grid Integration of Heterogeneous Energy Sources/Loads using a Multi-port MMC with Independent Power Flow
Vishnu Narayan Vipin, Venkatramanan D, Ned Mohan
Show (Yes/No): Comments:

12:09-12:22 Optimal Power Sharing Method in Photovoltaic Energy-Based Grid-Feeding Converters for Microgrid Applications
Agustin Tobias, Victor Cardenas, Juan Gonzalez-Rivera, Mario Gonzalez-Garcia, Fernando Quiroz-Vazquez, Carlos D. Garcia-Beltran
Show (Yes/No): Comments:

12:22-12:35 Analysis of the Application of PolynomialReference Tracking Generalized Predictive Controlin the Control of an LCL Filter
Thyago Estrabis, Cesar Santos, Raymundo Cordero, Walter Suemitsu, Gabriel Gentil, Matheus Pelzl
Show (Yes/No): Comments:

12:35-12:48 Power Loss Investigation of Series-Connected Current Source Inverters
Bowen Jiang, Zijian Wang, Qiang Wei
Show (Yes/No): Comments:
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Room K
Saturday, 16 October 2021
11:30 - 12:50

S513 - SS Modular Power Converters
Topologies, Control and Applications

Chairs: Deepak Ronanki, Ricardo Lizana Fuentes
11:30-11:43 Comparison between Two-level and Three-level Based Multi-port Converter for Interconnected MVAC Microgrids
   Tarek Younis, Ahmed Ibrahim, Paolo Mattavelli
   Show (Yes/No): Comments:

11:43-11:56 Soft-Deadbeat Control for Multivariable Three Phase VSC Under Variable Grid Voltage
   Marcos Andreu, Jaime Rohten, Jose Espinoza, Luis Moran, Miguel Albornoz, Jose Silva
   Show (Yes/No): Comments:

11:56-12:09 Fault Tolerant Predictive Control for Six-Phase Wind Generation Systems using Multi-Modular Matrix Converter
   Sergio Toledo, David Caballero, Edgar Maqueda, Silvia Arrúa, Marcos Gomez-Redondo, Marco Rivera, Raúl Gregor, Patrick Wheeler
   Show (Yes/No): Comments:

12:09-12:22 Multicarrier-based Capacitor Voltage Balancing Approach for a New Four-Level Multilevel Converter
   Hoang Le, Apparao Dekka
   Show (Yes/No): Comments:

12:22-12:35 A decoupled Nearest Level Control for a Modular Multilevel Cascade Converter based on Triple Star Bridge Cells (MMCC-TSBC)
   Mohammed Azharuddin Shamshuddin, David Arancibia, Felix Rojas, Javier Pereda, Ralph Kennel
   Show (Yes/No): Comments:

12:35-12:48 Design and Hardware Implementation of a H-Bridge Sub-module for Single-Phase 5-Level Cascaded Voltage Source Inverters
   Roberto Morales Caporal, Jose Francisco Perez Cuapio, Hayde Patricia Martinez Hernandez
   Show (Yes/No): Comments:
47th Annual Conference of the IEEE Industrial Electronics Society

Room L

Saturday, 16 October 2021
11:30 - 12:50

S523 - SS Multilevel Converters Topologies, Control Strategies and Protection

Chairs: Josep Pou, Satish Naik Banavath

11:30-11:43 A Balanced and Vertically Stacked Multilevel Power Converter Topology with Linear Component Scaling
Matthew Jahnes, Bernard Steyaert, Matthias Preindl
Show (Yes/No): Comments:

11:43-11:56 Modular Power Flow Enhancer for Transmission Networks under Unbalanced Power Grid Conditions
Semih Isik, Vasishta Burugula, Mohammed Alharbi, Subhashish Bhattacharya
Show (Yes/No): Comments:

11:56-12:09 An Integrated Multilevel Bridge Tapped Resonant Bidirectional AC to DC Converter
Kalyan Yenduri, Sunil Kumar Dube, Ramu Nair, Pritam Das
Show (Yes/No): Comments:

12:09-12:22 High Performance Predictive Control based Power Conversion for Photovoltaic Energy Harvesting
Zhanfan Yu, Yuehao Zhu, Guoyuan Li, Sally Sajadian
Show (Yes/No): Comments:

12:22-12:35 An Asymmetrical Modular Multilevel Converter with Sensorless Voltage Control for High-Quality Output
Zhongxi Li, Zhonggang Li, Angel Peterchev, Stefan Goetz
Show (Yes/No): Comments:

12:35-12:48 A Switched-Diode Multilevel Converter Topology
Mohammad Ali Hosseinzadeh, Maryam Sarebanzadeh, Cristian Garcia, Ebrahim Babaei, Jose Rodriguez
Show (Yes/No): Comments:
S101 - SS Advances in Component and System Modeling and Simulation of Power Systems in Transition to Converter-Dominated Systems

Chairs: Phylicia Cicilio, Reinaldo Tonkoski

11:30-11:43 Computationally Efficient Partitioned Modeling of Inverter Dynamics with Grid Support Functions
   Sunil Subedi, Nischal Guruwacharya, Ujjwol Tamrakar, Phylicia Cicilio, Hossein Moradi Rekabdarkolae, Robert Fourney, Reinaldo Tonkoski, Timothy M. Hansen
   Show (Yes/No): Comments:

11:43-11:56 Parametric Comparative Analysis between Virtual Synchronous Generator and Droop-based Inertia for Inverter-Based Microgrids
   Daniel D. Campo-Ossa, Enrique A. Sanabria-Torres, Jesus D. Vasquez-Plaza, Juan F. Patarroyo-Montenegro, Andres F. Lopez-Chavarrro, Fabio Andrade Rengifo
   Show (Yes/No): Comments:

11:56-12:09 Design of Proportional-Resonant Controllers for Voltage-Source Converters using State-Space Model
   Enrique Sanabria-Torres, Fabio Andrade Rengifo, Juan Patarroyo-Montenegro, Jesus Vasquez-Plaza, Andres Lopez-Chavarrro, Daniel Campo-Ossa
   Show (Yes/No): Comments:

12:09-12:22 GRU and LSTM Comparison for Black-Box Modeling of Power Electronic Converters
   Pouria Qashqai, Rawad Zgheib, Kamal Al-Haddad
   Show (Yes/No): Comments:

12:22-12:35 Design of Harmonic Compensators in PV Systems with Large Number of Micro-Inverters
   Nasim Rashidirad, Mohsen Hamzeh, Keyhan Sheshyekani
   Show (Yes/No): Comments:

12:35-12:48 Power Converter Topologies for Electrolyzer Applications to Enable Electric Grid Services
   Bang Nguyen, Mayank Panwar, Rob Hovsapian, Kazunori Nagasawa, Tuyen Vu
   Show (Yes/No): Comments:
T012 - TT Cloud Computing, Big Data and Software Engineering

Chairs: Yang Shi, Luis Ribeiro

11:30-11:43 Investigation on Optimizing Cost Function to Penalize Underestimation of Load Demand through Deep Learning Modeling
   Show (Yes/No): Comments:

11:43-11:56 Slicing the Past to Predict Future
   K. M. George
   Show (Yes/No): Comments:

11:56-12:09 Using the DELPHI Method for Model for Role Assignment in the Software Industry
   Daniel Varona, Luiz Fernando Capretz
   Show (Yes/No): Comments:

12:09-12:22 Broken Rotor Bar Detection in Induction Motors through Information Entropy Analysis on the Start-up Transient and Steady-State Current Signals
   Show (Yes/No): Comments:

12:22-12:35 Frequency-Band Analysis for Acoustic Noise Characterization of an Interior Permanent Magnet Motor
   Nathan Emery, Yihui Li, Berker Bilgin
   Show (Yes/No): Comments: